

**Rico Surface Water Sampling
Supplemental Surface Water Quality Monitoring
Rico, Colorado
Data Summary Report**

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August 2011

Rico, Colorado
Surface Water Sampling Report
August 2011 Sampling Event

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1.0 Introduction

In accordance with the Rico Sampling and Analysis Plan for Supplemental Surface Water Quality Monitoring at Rico, CO prepared by AECOM, dated November 2010, the surface water sampling event was completed on August 17th, 2011. Sampling was completed by Anderson Engineering Co. Inc., by technicians who are familiar with the Rico sites and the BP Control of Work Management System. Surface water samples were collected from prescribed locations within the St. Louis settling pond system and at the system discharge (002) to the Dolores River (collectively referred to as the St. Louis pond system), and previously sampled locations along the Dolores River above, at and below the St. Louis pond system. Figure 1 and Figure 2 (see Appendix A) illustrate the location of the various sampling stations. Sample results are summarized and laboratory analytical results are attached with quality control documentation.

2.0 Field Sampling

2.1 Sampling Frequency

The sampling period represented by this sampling event is for the month of August of 2011. Sampling will be performed on a monthly basis until at least April of 2012

2.2 Water Quality and Flow Measurement Sampling Locations

Samples were collected from the locations described on Table 1 and shown on Figure 1 and Figure 2 in Appendix A.

The Dolores River was sampled above the St. Louis pond system, and below the adit outfalls downstream of the reclaimed Silver Swan Mine area. The river was also sampled at the USGS gaging station downstream of the Silver Swan site.

TABLE 1 - Sample Location Summary

SITE ID	SITE DESCRIPTION
DR-4-SW	Dolores River below Silver Swan
DR-1	Dolores River above St. Louis settling pond system
DR-2	Dolores River immediately above the St. Louis settling pond system outfall
DR-3	St. Louis tunnel discharge at adit
DR-4	Discharge of Pond 15
DR-5	Discharge of Pond 8
DR-6	St. Louis settling pond system outfall to the Dolores River
DR-7	Dolores River below St. Louis settling pond system outfall
DR-G	Dolores River at USGS gaging station #09165000

2.3 Sampling Station Descriptions

The sampling requirements and stations are described in detail below:

DR-4-SW. Dolores River below Silver Swan. Sampling/flow measurement location is on the Dolores River below the Silver Swan site just downstream of a bend in the river and below a cemetery on the east bank. Flow measurements were collected by flowmeter.

DR-1. Dolores River above St. Louis settling ponds system. The sampling/flow measurement location is on the Dolores River approximately 50 feet upstream of the Rico Ranger Station. Flow measurements were collected by flowmeter.

DR-2. Dolores River immediately above the St. Louis settling pond system outfall. Sampling/flow measurement location is on the Dolores just above the 002 discharge outfall, and upstream of the hot tub discharge. The site is located directly adjacent to the thermal discharge which supplies the hot tub. Flow measurement was collected by flowmeter.

DR-3. St. Louis tunnel discharge at adit entrance. Sampling location is at the inlet of the flume, just before the throat. Flow measurement by an installed 9" flume at the sampling location.

DR-4. Discharge of Pond 15. Flow measurement was collected by flowmeter.

DR-5. Discharge of Pond 8. Flow measurement was collected by flowmeter.

DR-6. St. Louis settling ponds system outfall to the Dolores River (Outfall 002). Flow measurement by installed 9" flume.

DR-7. Dolores River below St. Louis settling ponds system outfall. Sampling/flow measurement location is located just off the entrance road to the St. Louis ponds site where the Dolores River is adjacent to the entrance road. The site is located approximately 75 feet downstream from a large bend in the river that first brings the Dolores adjacent to the entrance road. Flow measurements was collected by flowmeter.

DR-G. Located at the USGS gauging station #09165000. Flow measurements were collected by flowmeter.

3.0 Sampling and Analysis Parameters and Methods

All samples were collected as grab samples. Samples were collected from well-mixed locations, which are representative of conditions within the flow stream. Lab-certified plastic bottles were used to collect sample water for analyses. Clean hands, dirty hands procedures were followed throughout the sampling. For quality control purposes, one duplicate sample and one field blank were included with the water samples being submitted to the laboratory for analysis.

Lab-certified plastic bottles were used to collect all water samples. Sample water was first collected in clean plastic jugs, and within 10 minutes, placed in the sampling bottles. A 500 mL HDPE bottle was used to collect a sample for alkalinity, TDS, TSS, and sulfate analyses. A 250 mL HDPE bottle was used to collect a sample for salinity analysis. Sample water for dissolved metals analysis and potentially dissolved metals analysis was filtered through a 0.45 μ m filter into a 250 mL sample bottle containing nitric acid preservative. Sample water for total recoverable metals analysis and water hardness was collected without filtration in a 250 mL HDPE sample bottle containing nitric acid preservative. Sample water for cyanide analysis was collected without filtration into a 250 mL HDPE sample bottle containing sodium hydroxide preservative.

Field parameters were measured at the time of sample collection. Field measurement data for pH, temperature, conductivity, and dissolved oxygen were recorded using an EXTECH Instruments DO610 ExStik II DO/pH/Conductivity kit, and results were logged in the field log book. The field instrument was calibrated prior to use with equipment calibration and maintenance standard solutions and consistent with manufacturer's instructions. Weather parameters including temperature and precipitation were obtained and documented.

All sample bottles were labeled to identify sample number, date and time of collection, type of analysis, and appropriate preservative. In addition, sample analysis/chain of custody forms were completed and processed at the time of sample collection. Original chain of custody forms are signed, dated, and placed in the sample container prior to sealing the container for shipment.

Water samples were kept in cooled containers and sent to the analytical laboratory. Samples were submitted to Pace Analytical Laboratories in Lenexa, Kansas for analysis by analytical procedures listed on Table 2. Analysis was performed according to methods specified in 40 CFR, Part 136 or other methods approved by the EPA. Laboratory methods and reporting limits for all parameters are presented in Table 2. Laboratory results and supporting documentation including quality assurance results are contained in the Appendix C and Appendix D of this report.

TABLE 2 - Analytical Procedures Summary

Parameter	Detection Limit (MDL)	Method
Field Parameters		
pH (s.u.)	+/- 0.01 pH	EPA 150.2
Temperature (°C)	+/- 1°C	Standard Method 2550
Conductivity ($\mu\text{mhos}/\text{cm}$)	+/- 2% Full Scale	EPA 120.1
Dissolved Oxygen	+/- 2% Full Scale	SM 4500-OG
Non-Metals		
Alkalinity (mg/L as CaCO ₃)	RL – 20 mg/L	EPA 310.1
Hardness (mg/L as CaCO ₃)	RL – 0.5 mg/L	SM 2340 B
Total Dissolved Solids (mg/L as TDS)	RL – 5.0 mg/L	SM 2540C
Total Suspended Solids (mg/L as TSS)	RL – 5.0 mg/L	SM 2540D
Cyanide ($\mu\text{g}/\text{L}$ as CN)	RL – 0.005 mg/L	EPA 335.4
Salinity	RL – 6 mg/L	SM 2510B (calculated)
Sulfate (mg/L as SO ₄)	RL – 1 mg/L	EPA 300.0
Total and Dissolved Metals		
Aluminum ($\mu\text{g}/\text{L}$ as Al)	2 $\mu\text{g}/\text{L}$	EPA 200.8
Antimony ($\mu\text{g}/\text{L}$ as Sb)	0.07 $\mu\text{g}/\text{L}$	EPA 200.8
Arsenic ($\mu\text{g}/\text{L}$ as As)	0.09 $\mu\text{g}/\text{L}$	EPA 200.8
Barium ($\mu\text{g}/\text{L}$ as Ba)	0.08 $\mu\text{g}/\text{L}$	EPA 200.8
Beryllium ($\mu\text{g}/\text{L}$ as Be)	0.02 $\mu\text{g}/\text{L}$	EPA 200.8
Cadmium ($\mu\text{g}/\text{L}$ as Cd)	0.03 $\mu\text{g}/\text{L}$	EPA 200.8
Calcium ($\mu\text{g}/\text{L}$ as Ca)	10 $\mu\text{g}/\text{L}$	EPA 200.8
Chromium (ug/l as Cr)	0.25 ug/L	EPA 200.8
Copper ($\mu\text{g}/\text{L}$ as Cu)	0.07 $\mu\text{g}/\text{L}$	EPA 200.8
Iron ($\mu\text{g}/\text{L}$ as Fe)	4.67 $\mu\text{g}/\text{L}$	EPA 200.8
Lead ($\mu\text{g}/\text{L}$ as Pb)	0.05 $\mu\text{g}/\text{L}$	EPA 200.8
Magnesium ($\mu\text{g}/\text{L}$ as Mg)	2.5 $\mu\text{g}/\text{L}$	EPA 200.8
Manganese ($\mu\text{g}/\text{L}$ as Mn)	0.17 $\mu\text{g}/\text{L}$	EPA 200.8
Mercury ($\mu\text{g}/\text{L}$ as Hg)	0.049 $\mu\text{g}/\text{L}$	EPA 245.1
Nickel ($\mu\text{g}/\text{L}$ as Ni)	0.07 $\mu\text{g}/\text{L}$	EPA 200.8
Potassium ($\mu\text{g}/\text{L}$ as K)	10 $\mu\text{g}/\text{L}$	EPA 200.8
Selenium (ug/l as Se)	0.22 ug/L	EPA 200.8
Silver (ug/L as Ag)	0.25 ug/L	EPA 200.8
Sodium ($\mu\text{g}/\text{L}$ as Na)	25 $\mu\text{g}/\text{L}$	EPA 200.8
Thallium ($\mu\text{g}/\text{L}$ as Tl)	0.05 ug/L	EPA 200.8
Vanadium ($\mu\text{g}/\text{L}$ as V)	0.05 ug/L	EPA 200.8
Zinc ($\mu\text{g}/\text{L}$ as Zn)	2.5 $\mu\text{g}/\text{L}$	EPA 200.8

4.0 Flow Measurement Methods

Flows were measured at the river sampling locations where accessible. The flow measurements obtained this sampling period are described in Section 2.3. Flow velocity was measured for sampling locations DR-1, DR-2, DR-3, DR-4, DR-5, DR-6, DR-7, DR-4-SW, and DR-G. Cross-sectional areas could be safely obtained at all river sample locations (DR-1, DR-2, DR-7, DR-4-SW, AND DR-G) and at the discharge spillway of pond 8 (DR-5). Refer to Figures 3 through 8 in Appendix E for these cross sections. The flowrates are presented on Table 3 in Appendix B.

Flowrates collected during this sampling event were taken by use of a Marsh-McBirney Flow-Mate Model 2000 portable flow meter using the six-tenths-depth method. This method uses the velocity at six-tenths of the depth as the mean velocity. This method is generally reliable between depths from 0.3 feet to 2.5 feet. Stream sections were selected with the desired characteristics of parallel flows, smooth streambed with minimal obstructions, a straight channel, and a flat streambed. The stream section, perpendicular to the flow was measured in feet. The width of the section was determined and divided into several vertical sections. Flow measurements of velocity (by the six-tenths-depth method) and water depth were measured at each vertical section using the Marsh-McBirney flow meter and wading rod assembly. The flow meter was set to the 3 second fixed period average mode. A minimum of three velocity readings were recorded at each vertical section. Flows were calculated for each stream section using the water depth, horizontal distance, and averaged velocity data.

The St. Louis tunnel flow (DR-3) and St. Louis pond discharge (DR-6) currently have Parshall flumes installed. Flow measurements can be determined at these flumes when the depth of flow is known at a particular point. In order to continuously monitor and measure the depth of flow, depth measurement devices were installed on May 11th, 2011 and May 12th, 2011 at both the north and south flumes. An STI Ultrasonic IRU-5180 automated water level detector was installed at the north Parshall flume. It is suspended over the flow stream and measures the distance from the sensor to the water surface using ultrasonic sound waves. It then uses that value to determine the depth of flow, and reports it. The south flume has a submersible pressure transducer called the OTT Orpheus Mini. It records deviations from a pre-programmed depth of air space from the top edge of the flume down to the water level. Knowing then the total depth of the flume, the depth of flow can be determined. The post processed data for these two devices for the month of August, 2011 is given in Appendix I and Appendix J.

It has been observed that the flow at the north Parshall flume (DR-3) have recorded readings with some variability. Actions have been taken to reduce turbulent flow entering the flume by laying the liner as flat as possible. Additionally, the manufacturer has provided guidance for data error correction that have been implemented. In order to obtain accurate data a transducer water flow measurement device has been ordered and is to be installed to confirm the ultrasonic readings.

5.0 Analytical Results

The results of the laboratory analysis are summarized on Table 4 in Appendix B. The data is organized by sample location. The laboratory results report is contained in Appendix C.

6.0 Quality Control

In addition to the standard laboratory Quality Control (QC), field QC samples for this sampling event included a field duplicate and a Field Blank (FB).

6.1 Field QC

A field duplicate water sample was collected from sample location DR-3. During sample collection, the duplicate sample bottles were filled simultaneously from the discharge stream of water. The duplicate sample was submitted to the analytical laboratory with the label of DR-8, so as to serve as a “blind duplicate.”

Table 5 compares the analytical results from DR-3 and DR-8 and presents the Relative Percent Difference (RPD). The RPD for aqueous samples should be +/- 20%. All comparative values were within +/-20% with the exception of beryllium, alkalinity, and TSS.

TABLE 5 - Duplicate of DR-3, Relative Percent Difference (RPD)

Analyte (Total)	DR-3 ($\mu\text{g/L}$)	DR-8 ($\mu\text{g/L}$) Duplicate of DR-3	RPD (%)
Aluminum	230	232	0.87
Antimony	<0.50	<0.50	0.00
Arsenic	<0.50	<0.50	0.00
Barium	18.6	18.9	1.60
Beryllium	0.42	0.51	19.35
Cadmium	19.2	19.6	2.06
Calcium	217000	222000	2.28
Chromium	<0.50	0.6	0.00
Copper	38.4	39	1.55
Iron	4250	4300	1.17
Lead	1.3	1.3	0.00
Magnesium	18600	18800	1.07
Manganese	2400	2490	3.68
Mercury	<0.20	<0.20	0.00
Nickel	6.8	7.1	4.32
Potassium	1540	1560	1.29
Selenium	<0.50	<0.50	0.00
Silver	<0.50	<0.50	0.00
Sodium	8500	8580	0.94
Thallium	<0.10	<0.10	0.00
Vanadium	<0.10	<0.10	0.00
Zinc	4070	4150	1.95
Alkalinity (mg/L)	95.7	95.7	0.00

Hardness	619000	631000	1.92
TDS (mg/L)	888	873	-1.70
TSS (mg/L)	18.0	14	-25.00
Cyanide	<0.0050	<0.0050	0.00
Salinity (mg/L)	683	660	-3.43
Sulfate (mg/L)	512	488	-4.80

A Field Blank (FB) was collected by pouring distilled water through the filtering manifold after the first day of sampling and decontaminating the equipment. The FB was analyzed for the same constituents as the other samples. The FB had below detectable concentrations for all metals. The pH was neutral, the Electrical Conductivity (EC) was non-detectable, and it showed a low level of alkalinity.

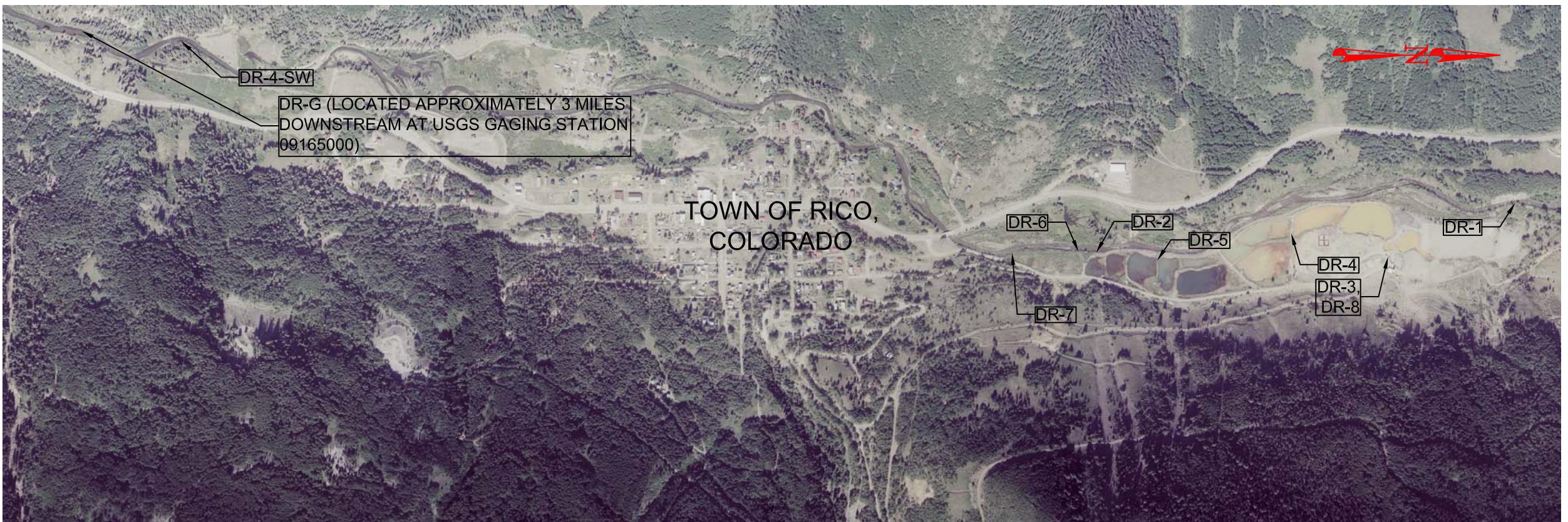
6.2 Laboratory QC

The laboratory control sample (LCS), method blank, matrix spike, and matrix spike duplicate sample results were all within the established limits of concentration, percent recovery, and relative percent difference, with several minor exceptions under the following:

- The matrix spike recovery exceeded QC limits for the Matrix Spike & Matrix Spike Duplicate for aluminum, antimony, arsenic, barium, cadmium, calcium (total and dissolved), chromium, copper, iron, lead, magnesium (total and dissolved), manganese (total and dissolved), nickel, potassium, selenium, sodium (total and dissolved), thallium, vanadium, and zinc (total and dissolved), and for the Matrix Spike Sample for aluminum, barium, calcium (total and dissolved), iron, magnesium(total and dissolved), manganese, potassium (total and dissolved), silver, and sodium (total and dissolved). Batch accepted based on laboratory control sample (LCS) recovery.
- The matrix spike recovery exceeded QC limits for the Matrix Spike Sample for mercury. Batch accepted based on laboratory control sample (LCS) recovery.
- For the Sample Duplicate for total suspended solids, the RPD value was outside control limits.

QC results are summarized in Tables 6 through 9 In Appendix B with the full laboratory QC results presented in Appendix D.

Appendix A
Sampling Location Maps



General Notes

Scale in Feet
0 500 1000

No.	Revision/Issue	Date

ATLANTIC RICHFIELD COMPANY



ANDERSON
ENGINEERING COMPANY, INC.

DRAWN BY: MAD

ENGINEER: CS, MAD

APPROVED:

RICO SURFACE
WATER SAMPLING

SURFACE WATER
SAMPLING LOCATIONS

RICO, CO

Project	Figure
Date 09-FEB-2011	
Scale 1" = 1000'	1



General Notes		
Scale in Feet 0 175 350		
No.	Revision/Issue	Date
ATLANTIC RICHFIELD COMPANY		
 ANDERSON ENGINEERING COMPANY, INC.		
DRAWN BY: MAD ENGINEER: CS, MAD APPROVED:		
RICO SURFACE WATER SAMPLING		
ST. LOUIS POND AREA SAMPLING LOCATIONS		
RICO, CO		
Project	Figure	
Date	09-FEB-2011	
Scale	1" = 350'	
2		

Appendix B

Data Tables

TABLE 3 - Sampling Field Data and Station Information Summary

	Field Measurements				GPS Location						
Sample Location	pH	Temp (°C)	EC (mS/cm)	Dissolved Oxygen (ppm)	Latitude	Longitude	Date	By	Stream Cross section area (ft^2)	Flowrate (cfs)	Comments
DR-1	8.06	19.2	0.232	0.88	37°42'37.6" N	108°01'56.0" W	8/17/2011	M. DeFriez, S. Cosper	28.4	69.7	Cross section on the Dolores River above St. Louis settling pond system (approximately 800 ft north of the northern edge of Pond 18). Flow Measurement by flow meter.
DR-2	7.88	15.8	0.256	1.01	37°42'03.96" N	108°01'49.89" W	8/17/2011	M. DeFriez, S. Cosper	40.7	42.3	Cross section on the Dolores River, approximately 150 ft north of system outfall. Flow measurement by flow meter.
DR-3	7.39	19.6	1.034	0.82	37°42'27.5" N	108°01'50.3" W	8/17/2011	M. DeFriez, S. Cosper	NA	1.96	St Louis adit discharge. Flow measurement by installed Parshall Flume.
DR-4	7.91	22.6	1.071	0.73	37°42'19.7" N	108°01'52.7" W	8/17/2011	M. DeFriez, S. Cosper	NA	1.90	Pond 15 discharge. Flow measurement by flow meter.
DR-5	8.09	19.8	1.056	0.8	37°42'08.8" N	108°01'49.7" W	8/17/2011	M. DeFriez, S. Cosper	NA	1.81	Pond 8 was discharging at multiple small locations as well as the spillway. Flow velocity measurements were collected at the spillway. Due to the shallow water and multiple paths, accurate flow measurements could not be determined for this sampling location and period. Leakage was estimated by water balance. Flow measurements were take at spillway by flow meter.
DR-6	7.54	18.4	1.118	0.85	37°42'02.4" N	108°01'50.2" W	8/17/2011	M. DeFriez, S. Cosper	NA	1.75	Outfall to Dolores River. Flow measurement by installed Parshall Flume.
DR-7	7.58	15.2	0.428	1.01	37°41'57.12" N	108°01'49.63" W	8/17/2011	M. DeFriez, S. Cosper	42.4	63.1	Cross section on the Dolores River, approximately 500 ft below St. Louis settling pond system outfall. Flow measurement by flow meter.
DR-8	7.39	19.6	1.034	0.82	37°42'27.5" N	108°01'50.3" W	8/17/2011	M. DeFriez, S. Cosper	NA	1.96	DR-8 is a duplicate sample of DR-3. See comments for DR-3.
DR-4-SW	7.94	11.7	0.336	1.32	37°40'49.4" N	108°02'09.0" W	8/17/2011	M. DeFriez, S. Cosper	31.9	56.6	Cross section on the Dolores River approximately 100 below the Silver Swan site. Flow measurement by flow meter.
DR-G	8.69	13.6	0.334	1.35	37°38'19.8" N	108°03'36.5" W	8/17/2011	M. DeFriez, S. Cosper	21.3	36.9	Cross section on the Dolores River at USGS gauging station #09165000, approximately 3.5 miles downstream of the Silver Swan site
FB	7.75	29.7	1.0	0.82	N/A	N/A	8/17/2011	M. DeFriez, S. Cosper	NA	NA	Field blank

TABLE 4 - Analytical Sampling Results Summary August 2011

Metals (ug/L)																									Non-Metals (mg/L, unless otherwise indicated)						Field Parameters					
DR-1: Delores River above St. Louis settling pond system		Date Collected	Fraction	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness (ug/L as CaCO3)	TDS	TSS	Cyanide	Salinity	Sulfate	pH	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (ppm)
DR-1	8/17/11	Total	23.3	<0.50	<0.50	62.7	<0.20	<0.080	36300	<0.50	0.51	<0.10	5290	13.0	<0.20	<0.50	640	<0.50	<0.50	2040	<0.10	0.15	<5.0	81.0	112000	118.0	12.0	<0.0050	144	38.7	8.06	19.2	0.232	0.88		
DR-1 D	8/17/11	Dissolved	10.6	<0.50	<0.50	65.6	<0.20	<0.080	38700	<0.50	<0.50	<0.10	4940	11.0	<0.20	<0.50	651	<0.50	<0.50	2040	<0.10	0.11	<5.0													
DR-2: Delores River immediately above the St. Louis settling pond system outfall		Date Collected	Fraction	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness (ug/L as CaCO3)	TDS	TSS	Cyanide	Salinity	Sulfate	pH	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (ppm)
DR-2	8/17/11	Total	26.3	<0.50	<0.50	62.0	<0.20	<0.080	44700	<0.50	<0.50	<0.10	5290	80.9	<0.20	<0.50	721	<0.50	<0.50	2290	<0.10	0.16	<5.0	79.1	136000	167.0	7.0	<0.0050	164	51.5	7.88	15.8	0.256	1.01		
DR-2 D	8/17/11	Dissolved	10.5	<0.50	<0.50	63.2	<0.20	<0.080	46100	0.56	<0.50	<0.10	5580	81.5	<0.20	<0.50	732	<0.50	<0.50	2260	<0.10	<0.10	5.8													
DR-3: St. Louis tunnel discharge at adit		Date Collected	Fraction	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness (ug/L as CaCO3)	TDS	TSS	Cyanide	Salinity	Sulfate	pH	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (ppm)
DR-3	8/17/11	Total	230	<0.50	<0.50	18.6	0.42	19.20	217000	<0.50	38.4	1.3	18600	2400	<0.20	6.8	1540	<0.50	<0.50	8500	<0.10	<0.10	4070	95.7	619000	888	18.0	<0.0050	683	512	7.39	19.6	1.034	0.82		
DR-3 D	8/17/11	Dissolved	29.2	<0.50	<0.50	19.2	0.23	19.40	262000	<0.50	4.4	1500	<0.10	17400	2920	<0.20	7.5	1600	<0.50	<0.50	8200	<0.10	<0.10	4630												
DR-4: Discharge of Pond 15		Date Collected	Fraction	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness (ug/L as CaCO3)	TDS	TSS	Cyanide	Salinity	Sulfate	pH	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (ppm)
DR-4	8/17/11	Total	160	<0.50	<0.50	18.9	0.32	18.40	228000	<0.50	27.0	2960	0.9	18900	2490	<0.20	6.7	1580	<0.50	<0.50	8650	<0.10	<0.10	4040	93.8	647000	860	20	<0.0050	654	492	7.91	22.6	1.071	0.73	
DR-4 D	8/17/11	Dissolved	4.4	<0.50	<0.50	17.9	<0.20	15.70	218000	<0.50	1.5	<0.50	<0.10	16800	2320	<0.20	7.0	1540	<0.50	<0.50	7920	<0.10	<0.10	3160												
DR-5: Discharge of Pond 8		Date Collected	Fraction	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness (ug/L as CaCO3)	TDS	TSS	Cyanide	Salinity	Sulfate	pH	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (ppm)
DR-5	8/17/11	Total	72.6	<0.50	<0.50	18.6	<0.20	15.90	225000	<0.50	12	1240	0.35	19400	2210	<0.20	6.2	1730	<0.50	<0.50	8920	<0.10	<0.10	3210	105	642000	909	<5.0	<0.0050	705	517	8.09	19.8	1.056	0.8	
DR-5 D	8/17/11	Dissolved	<4.0	<0.50	<0.50	18	<0.20	13.90	220000	<0.50	1.5	<0.50	<0.10	17300	2140	<0.20	6.7	1700	<0.50	<0.50	8240	<0.10	<0.10	2650												
DR-6: St. Louis settling pond system outfall to the Delores River (Outfall 002)		Date Collected	Fraction	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness (ug/L as CaCO3)	TDS	TSS	Cyanide	Salinity	Sulfate	pH	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (ppm)
DR-6	8/17/11	Total	27.8	<0.50	<0.50	19.8	<0.20	14.40	242000	<0.50	5.3	503	0.27	22000	1970	<0.20	5.8	2310	<0.50	<0.50	10900	<0.10	<0.10	2880	125	695000	864	6.0	<0.0050	719	579	7.54	18.4	1.118	0.85	
DR-6 D	8/17/11	Dissolved	<4.0	<0.50	<0.50	19.4	<0.20	13.80	269000	<0.50	1.5	<0.50	<0.10	19400	1880	<0.20	6	2230	<0.50	<0.50	9860	<0.10	<0.10	3040												
DR-7: Delores River below St. Louis settling pond system outfall		Date Collected	Fraction	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness (ug/L as CaCO3)	TDS	TSS	Cyanide	Salinity	Sulfate	pH	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (ppm)
DR-7	8/17/11	Total	21.4	<0.50	0.63	57.5	<0.20	1.40	70600	<0.50	0.96	143	0.1	8930	278	<0.20	0.74	1400	<0.50	<0.50	4380	<0.10	0.14	260	105	213000	264	10.0	<0.0050	265	114	7.58	15.2	0.428	1.01	
DR-7 D	8/17/11	Dissolved	13	<0.50	0.66	56.6	<0.20	1.30	68700	<0.50	0.6	54.5	<0.10	8260	273	<0.20	0.81	1370	<0.50	<0.50	4190	<0.10	0.11	246												
DR-8: St. Louis tunnel discharge at adit (Duplicate of DR-3)		Date Collected	Fraction	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness (ug/L as CaCO3)	TDS	TSS	Cyanide	Salinity	Sulfate	pH	Temperature (°C)	Conductivity (mS/cm)	Dissolved Oxygen (ppm)
DR-8																																				

Rico Colorado Surface Water Sampling QC Results - August 2011 Sampling

TABLE 6 - Method Blank

Description	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness	TDS	TSS	Cyanide	Sulfate	
QC Sample	MB-1043331	MB-1045089	MB-1043331	MB-868668	MB-1043331	MB-864924	MB-864921	MB-867554	MB-867689																				
Units	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L																							
Date	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	9/6/2011	8/31/2011	9/6/2011	8/24/2011	8/24/2011	8/30/2011	8/30/2011	
Time	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	9:51	17:12	17:08	19:37	15:35	
Result	ND	ND	ND	ND	ND																								
RL	4.0	0.50	0.50	0.30	0.20	0.080	20.0	0.50	0.50	50.0	0.10	5.0	0.50	0.20	0.50	20.0	0.50	0.50	50.0	0.10	0.10	5.0	20.0	71.0	5.0	5.0	0.0050	1.0	
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Dissolved																													
QC Sample	MB-1043321	-	-	-	-	-																							
Units	µg/L	-	-	-	-	-																							
Date	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	9/1/2011	-	-	-	-	-		
Time	17:17	2:53	2:53	2:53	17:17	17:17	2:53	17:17	17:17	17:17	16:25	17:17	17:17	2:53	17:17	17:17	2:53	17:17	17:17	2:53	17:17	2:53	-	-	-	-	-		
Result	ND	-	-	-	-	-																							
RL	4.0	0.50	0.50	0.30	0.20	0.080	20.0	0.50	0.50	50.0	0.10	5.0	0.50	0.20	0.50	20.0	0.50	0.50	50.0	0.10	0.10	5.0	-	-	-	-	-		
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Sample Duplicate																													
QC Sample	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SD-864925	SD-864922	-	-	
Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mg/L	mg/L	-	-	
Original Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	864	20.0	-	-	
Dup Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	963	27.0	-	-	
RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	30	-	-	
Max RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	25	-	-	
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	R1	-	-	-	
Sample Duplicate																													
QC Sample	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SD-864926	SD-864923	-	-	
Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mg/L	mg/L	-	-	
Original Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	20.0	-	-	
Dup Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	16.0	-	-	
RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	
Max RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	17	25	-	-	
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

DEFINITIONS
DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.
ND - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
S - Surrogate
1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
Laboratories
PASI-K Pace Analytical Services - Kansas City
PASI-M Pace Analytical Services - Minneapolis
ANALYTE QUALIFIERS
E Analyte concentration exceeded the calibration range. The reported result is estimated.
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.



Rico Colorado Surface Water Sampling QC Results - August 2011 Sampling

TABLE 7 - Laboratory Control Sample

Description	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness	TDS	TSS	Cyanide	Sulfate		
QC Sample	LCS-1043332	LCS-868669	LCS-1043332	-	-	LCS-867555	LCS-868792																							
Units	µg/L	mg/L	mg/L	-	-	-	-																							
Spike Conc.	80	80	80	80	80	80	1000	80	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000	80	1000
LCS Result	85.7	78.4	81.1	79.5	76.7	79.3	1060	79.3	82.8	998	79.5	1040	79.1	5.0	83.7	1020	81.2	70.4	1010	79.1	78.6	80.9	482	6940	-	-	0.110	5.1		
LCS % Rec	107	98	101	99	96	99	106	99	103	100	99	104	99	100	105	102	101	88	101	99	98	101	96	-	-	-	108	103		
% Rec Limits	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	80-120	90-110		
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Dissolved																														
QC Sample	LCS-1043322	-	-	-	-	-	-																							
Units	µg/L	-	-	-	-	-	-																							
Spike Conc.	80	80	80	80	80	80	1000	80	80	1000	80	1000	80	5	80	1000	80	80	1000	80	80	80	80	80	-	-	-	-	-	-
LCS Result	80.7	79.5	78.4	82.1	76.3	82	1060	81.3	79.8	1020	85.6	1020	80.8	5.1	107	1020	80.4	70.4	998	86.6	81.6	82.8	-	-	-	-	-	-	-	
LCS % Rec	101	99	98	103	95	103	106	102	100	102	107	102	101	101	107	102	101	88	100	108	102	104	-	-	-	-	-	-	-	
% Rec Limits	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115	85-115		
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Sample Duplicate																														
QC Sample	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SD-868670	-	-	-	-	-	
Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mg/L	-	-	-	-	-	
Original Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	125	-	-	-	-	-	
Dup Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121	-	-	-	-	-	
RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	
Max RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sample Duplicate																														
QC Sample	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SD-868671	-	-	-	-	-	
Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mg/L	-	-	-	-	-	
Original Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	105	-	-	-	-	-	
Dup Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110	-	-	-	-	-	
RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	
Max RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

DEFINITIONS
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J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
MDL - Adjusted Method Detection Limit.
S - Surrogate
1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.
Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
LCS(D) - Laboratory Control Sample (Duplicate)
MS(D) - Matrix Spike (Duplicate)
DUP - Sample Duplicate
RPD - Relative Percent Difference
NC - Not Calculable.
SG - Silica Gel - Clean-Up
U - Indicates the compound was analyzed for, but not detected.
N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
LABORATORIES
PASI-K Pace Analytical Services - Kansas City
PASI-M Pace Analytical Services - Minneapolis
ANALYTE QUALIFIERS
E Analyte concentration exceeded the calibration range. The reported result is estimated.
M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.



Rico Colorado Surface Water Sampling QC Results - August 2011 Sampling

TABLE 9 - Matrix Spike Sample

Description	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc	Alkalinity	Hardness	TDS	TSS	Cyanide	Sulfate	
QC Sample	MSS-1043335	-	-	MSS-867556	MSS-868861																								
Units	µg/L	-	-	mg/L	mg/L																								
Original Result	87.6	<0.070	3.9	782	<0.020	<0.030	130000	0.81	0.52	12900	0.90	11200	1900	7.5	3830	<0.22	<0.070	24800	<0.050	0.56	26.4	-	371000	-	ND	232			
Spike Conc.	80	80	80	80	80	80	1000	80	80	1000	80	80	1000	5	80	1000	80	80	80	80	-	-	-	-	0.1	100			
MSS Result	285	89.5	97.0	946	75.6	91.4	138000	90.8	92.8	15800	90.9	14000	2150	3.8	101	5510	92.6	39.9	31200	89.0	90.5	121	-	403000	-	0.093	332		
MSS % Rec	247	112	116	206	95	114	800	112	115	294	112	286	311	75	117	168	116	50	538	111	112	118	-	-	-	-	93	100	
% Rec Limits	75-125	75-126	75-127	75-128	75-129	75-130	75-131	75-132	75-133	75-134	75-135	75-136	75-137	80-120	75-139	75-140	75-141	75-142	75-143	75-144	75-145	75-146	-	-	-	-	41-136	61-119	
Qualifiers	I	M1	-	-	M1	-	-	-	E, M1	-	M1	M1	-	M1	M1	-	M1	M1	-	-	-	-	-	-	-	-	-		
Dissolved																													
QC Sample	MSS-1043325	-	-	-	-	-	-																						
Units	µg/L	-	-	-	-	-	-																						
Original Result	ND	-	-	-	-	-	-																						
Spike Conc.	80	80	80	80	80	80	1000	80	80	1000	80	1000	80	5	80	1000	80	80	1000	80	80	80	-	-	-	-	-	-	-
MSS Result	81.7	90.8	92	122	77	91.8	271000	83.2	90.6	1000	82.2	55200	117	5.5	89.4	8300	97.5	73.5	224000	93.4	86.6	98.5	-	-	-	-	-	-	-
MSS % Rec	98	113	114	120	96	115	1420	102	109	100	102	637	102	109	109	137	111	92	1680	117	105	114	-	-	-	-	-	-	-
% Rec Limits	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	70-130	-	-	-	-	-	-	
Qualifiers	I	E, M1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Sample Duplicate																													
QC Sample	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	SD-867557	-	
Units	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	mg/L	-	
Original Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-	
Dup Result	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-	
RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-
Max RPD	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Qualifiers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DEFINITIONS
 DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution or the sample aliquot, or moisture content.
 ND - Not Detected at or above adjusted reporting limit.
 J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
 MDL - Adjusted Method Detection Limit.
 S - Surrogate
 1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.
 Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.
 LCS(D) - Laboratory Control Sample (Duplicate)
 MS(D) - Matrix Spike (Duplicate)
 DUP - Sample Duplicate
 RPD - Relative Percent Difference
 NC - Not Calculable.
 SG - Silica Gel - Clean-Up
 U - Indicates the compound was analyzed for, but not detected.
 N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.
 Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.
LABORATORIES
 PASI-K Pace Analytical Services - Kansas City
 PASI-M Pace Analytical Services - Minneapolis
ANALYTE QUALIFIERS
 E Analyte concentration exceeded the calibration range. The reported result is estimated.
 M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.



Appendix C

Project Narrative and Laboratory Analytical Reports

September 07, 2011

Mark DeFriez
Anderson Engineering Company I
977 W 2100 S.
Salt Lake City, UT 84119

RE: Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

Dear Mark DeFriez:

Enclosed are the analytical results for sample(s) received by the laboratory on August 23, 2011. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Colleen Koporc

colleen.koporc@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: RIZO WATER SAMPLING AUG. 2011
 Pace Project No.: 60104863

Minnesota Certification IDs

1700 Elm Street SE Suite 200, Minneapolis, MN 55414
 A2LA Certification #: 2926.01
 Alaska Certification #: UST-078
 Alaska Certification #MN00064
 Arizona Certification #: AZ-0014
 Arkansas Certification #: 88-0680
 California Certification #: 01155CA
 EPA Region 8 Certification #: Pace
 Florida/NELAP Certification #: E87605
 Georgia Certification #: 959
 Idaho Certification #: MN00064
 Illinois Certification #: 200011
 Iowa Certification #: 368
 Kansas Certification #: E-10167
 Louisiana Certification #: 03086
 Louisiana Certification #: LA080009
 Maine Certification #: 2007029
 Maryland Certification #: 322
 Michigan DEQ Certification #: 9909
 Minnesota Certification #: 027-053-137

Mississippi Certification #: Pace
 Montana Certification #: MT CERT0092
 Nevada Certification #: MN_00064
 Nebraska Certification #: Pace
 New Jersey Certification #: MN-002
 New Mexico Certification #: Pace
 New York Certification #: 11647
 North Carolina Certification #: 530
 North Dakota Certification #: R-036
 North Dakota Certification #: R-036A
 Ohio VAP Certification #: CL101
 Oklahoma Certification #: D9921
 Oklahoma Certification #: 9507
 Oregon Certification #: MN200001
 Pennsylvania Certification #: 68-00563
 Puerto Rico Certification
 Tennessee Certification #: 02818
 Texas Certification #: T104704192
 Washington Certification #: C754
 Wisconsin Certification #: 999407970

Montana Certification IDs

602 South 25th Street, Billings, MT 59101
 EPA Region 8 Certification #: 8TMS-Q
 Idaho Certification #: MT00012

Montana Certification #: MT CERT0040
 NVLAP Certification #: 101292-0
 Minnesota Dept of Health Certification #: 030-999-442

Kansas Certification IDs

9608 Loiret Boulevard, Lenexa, KS 66219
 A2LA Certification #: 2456.01
 Arkansas Certification #: 05-008-0
 Illinois Certification #: 001191
 Iowa Certification #: 118
 Kansas/NELAP Certification #: E-10116

Louisiana Certification #: 03055
 Nevada Certification #: KS000212008A
 Oklahoma Certification #: 9205/9935
 Texas Certification #: T104704407-08-TX
 Utah Certification #: 9135995665

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SAMPLE SUMMARY

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60104863001	DR-6	Water	08/17/11 08:00	08/23/11 10:30
60104863002	DR-7	Water	08/17/11 08:00	08/23/11 10:30
60104863003	DR-8	Water	08/17/11 08:00	08/23/11 10:30
60104863004	DR-4-SW	Water	08/17/11 08:00	08/23/11 10:30
60104863005	DR-G	Water	08/17/11 08:00	08/23/11 10:30
60104863006	DR-1	Water	08/17/11 08:00	08/23/11 10:30
60104863007	DR-2	Water	08/17/11 08:00	08/23/11 10:30
60104863008	DR-3	Water	08/17/11 08:00	08/23/11 10:30
60104863009	DR-4	Water	08/17/11 08:00	08/23/11 10:30
60104863010	DR-5	Water	08/17/11 08:00	08/23/11 10:30
60104863011	FB	Water	08/17/11 08:00	08/23/11 10:30

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SAMPLE ANALYTE COUNT

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

Lab ID	Sample ID	Method	Analysts	Analytics Reported	Laboratory
60104863001	DR-6	EPA 6020	CJS, RJS	22	PASI-M
		EPA 6020	CJS, RJS	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	SRM1	1	PASI-K
		SM 2540C	CMG	1	PASI-K
		SM 2540D	CMG	1	PASI-K
		EPA 300.0	JPF	1	PASI-K
60104863002	DR-7	SM 4500-CN-E	AJM	1	PASI-K
		EPA 6020	CJS, RJS	22	PASI-M
		EPA 6020	CJS	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	SRM1	1	PASI-K
		SM 2540C	CMG	1	PASI-K
		SM 2540D	CMG	1	PASI-K
60104863003	DR-8	EPA 300.0	JPF	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 6020	CJS, RJS	22	PASI-M
		EPA 6020	CJS, RJS	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	SRM1	1	PASI-K
		SM 2540C	CMG	1	PASI-K
60104863004	DR-4-SW	SM 2540D	CMG	1	PASI-K
		EPA 300.0	JPF	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 6020	CJS, RJS	22	PASI-M
		EPA 6020	CJS	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M

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SAMPLE ANALYTE COUNT

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60104863005	DR-G	SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	SRM1	1	PASI-K
		SM 2540C	CMG	1	PASI-K
		SM 2540D	CMG	1	PASI-K
		EPA 300.0	JPF	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 6020	CJS, RJS	22	PASI-M
		EPA 6020	CJS	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	SRM1	1	PASI-K
60104863006	DR-1	SM 2540C	CMG	1	PASI-K
		SM 2540D	CMG	1	PASI-K
		EPA 300.0	JPF	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 6020	CJS, RJS	22	PASI-M
		EPA 6020	CJS	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	SRM1	1	PASI-K
		SM 2540C	CMG	1	PASI-K
		SM 2540D	CMG	1	PASI-K
		EPA 300.0	JPF	1	PASI-K
60104863007	DR-2	SM 4500-CN-E	AJM	1	PASI-K
		EPA 6020	CJS, RJS	22	PASI-M
		EPA 6020	CJS	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	SRM1	1	PASI-K
		SM 2540C	CMG	1	PASI-K

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SAMPLE ANALYTE COUNT

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

Lab ID	Sample ID	Method	Analysts	Analytics Reported	Laboratory
60104863008	DR-3	SM 2540D	CMG	1	PASI-K
		EPA 300.0	JPF	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 6020	CJS, RJS	22	PASI-M
		EPA 6020	CJS, RJS	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	SRM1	1	PASI-K
		SM 2540C	CMG	1	PASI-K
		SM 2540D	CMG	1	PASI-K
		EPA 300.0	JPF	1	PASI-K
60104863009	DR-4	SM 4500-CN-E	AJM	1	PASI-K
		EPA 6020	CJS, RJS	22	PASI-M
		EPA 6020	CJS	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	SRM1	1	PASI-K
		SM 2540C	CMG	1	PASI-K
		SM 2540D	CMG	1	PASI-K
		EPA 300.0	JPF	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
60104863010	DR-5	EPA 6020	CJS, RJS	22	PASI-M
		EPA 6020	CJS, RJS	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	SRM1	1	PASI-K
		SM 2540C	CMG	1	PASI-K
		SM 2540D	CMG	1	PASI-K
		EPA 300.0	JPF	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K
		EPA 6020	CJS, RJS	22	PASI-M
60104863011	FB	EPA 6020	RJS	22	PASI-M

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SAMPLE ANALYTE COUNT

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6020	CJS, RJS	21	PASI-M
		EPA 7470	TEM	1	PASI-M
		EPA 7470	TEM	1	PASI-M
		SM 2510B	SR1	1	
		Calculated	SR1	2	
		SM 2320B	SRM1	1	PASI-K
		SM 2540C	CMG	1	PASI-K
		SM 2540D	CMG	1	PASI-K
		EPA 300.0	JPF	1	PASI-K
		SM 4500-CN-E	AJM	1	PASI-K

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-6	Lab ID: 60104863001	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020							
Aluminum	27.8 ug/L		4.0	1	08/31/11 09:23	09/06/11 10:01	7429-90-5	M1
Antimony	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:01	7440-36-0	M1
Arsenic	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:01	7440-38-2	M1
Barium	19.8 ug/L		0.30	1	08/31/11 09:23	09/06/11 10:01	7440-39-3	M1
Beryllium	ND ug/L		0.20	1	08/31/11 09:23	09/06/11 10:01	7440-41-7	
Cadmium	14.4 ug/L		0.080	1	08/31/11 09:23	09/06/11 10:01	7440-43-9	M1
Calcium	242000 ug/L		400	20	08/31/11 09:23	09/01/11 21:22	7440-70-2	M1
Chromium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:01	7440-47-3	M1
Copper	5.3 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:01	7440-50-8	M1
Iron	503 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:01	7439-89-6	M1
Lead	0.27 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:01	7439-92-1	M1
Magnesium	22000 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:01	7439-95-4	M1
Manganese	1970 ug/L		2.5	5	08/31/11 09:23	09/01/11 21:18	7439-96-5	M1
Nickel	5.8 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:01	7440-02-0	M1
Potassium	2310 ug/L		20.0	1	08/31/11 09:23	09/06/11 10:01	7440-09-7	M1
Selenium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:01	7782-49-2	M1
Silver	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:01	7440-22-4	
Sodium	10900 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:01	7440-23-5	M1
Thallium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:01	7440-28-0	M1
Total Hardness by 2340B	695000 ug/L		1420	20	08/31/11 09:23	09/01/11 21:22		
Vanadium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:01	7440-62-2	M1
Zinc	2860 ug/L		100	20	08/31/11 09:23	09/01/11 21:22	7440-66-6	M1
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020							
Aluminum, Dissolved	ND ug/L		4.0	1	08/31/11 09:19	09/01/11 17:25	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:02	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:02	7440-38-2	
Barium, Dissolved	19.4 ug/L		0.30	1	08/31/11 09:19	09/01/11 03:02	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/31/11 09:19	09/01/11 17:25	7440-41-7	
Cadmium, Dissolved	13.8 ug/L		0.080	1	08/31/11 09:19	09/01/11 03:02	7440-43-9	
Calcium, Dissolved	269000 ug/L		400	20	08/31/11 09:19	09/02/11 12:59	7440-70-2	M1
Chromium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 17:25	7440-47-3	
Copper, Dissolved	1.5 ug/L		0.50	1	08/31/11 09:19	09/01/11 03:02	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/31/11 09:19	09/01/11 17:25	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 03:02	7439-92-1	
Magnesium, Dissolved	19400 ug/L		5.0	1	08/31/11 09:19	09/01/11 17:25	7439-95-4	M1
Manganese, Dissolved	1880 ug/L		2.5	5	08/31/11 09:19	09/01/11 17:30	7439-96-5	M1
Nickel, Dissolved	6.0 ug/L		0.50	1	08/31/11 09:19	09/01/11 17:25	7440-02-0	
Potassium, Dissolved	2230 ug/L		20.0	1	08/31/11 09:19	09/01/11 17:25	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:02	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:02	7440-22-4	
Sodium, Dissolved	9860 ug/L		50.0	1	08/31/11 09:19	09/01/11 17:25	7440-23-5	M1
Thallium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 03:02	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 17:25	7440-62-2	
Zinc, Dissolved	3040 ug/L		100	20	08/31/11 09:19	09/02/11 12:59	7440-66-6	M1

Date: 09/07/2011 06:19 PM

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-6	Lab ID: 60104863001	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/31/11 17:19	09/01/11 10:38	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/11 14:34	08/31/11 16:29	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	1120	umhos/cm	10.0	1		09/01/11 12:29		
Salinity	Analytical Method: Calculated							
Salinity (as dissolved solids)	719	mg/L	6.0	1		09/01/11 17:47		
Salinity (as seawater)	0.56	PSU	0.010	1		09/01/11 17:47		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	125	mg/L	20.0	1		08/31/11 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	864	mg/L	5.0	1		08/24/11 17:12		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	6.0	mg/L	5.0	1		08/24/11 17:08		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	579	mg/L	50.0	50		08/30/11 18:37	14808-79-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		08/30/11 19:41	57-12-5	

ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

Sample: DR-7	Lab ID: 60104863002	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Aluminum	21.4 ug/L		4.0	1	08/31/11 09:23	09/06/11 10:25	7429-90-5	
Antimony	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:25	7440-36-0	
Arsenic	0.63 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:25	7440-38-2	
Barium	57.5 ug/L		0.30	1	08/31/11 09:23	09/06/11 10:25	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/31/11 09:23	09/06/11 10:25	7440-41-7	
Cadmium	1.4 ug/L		0.080	1	08/31/11 09:23	09/06/11 10:25	7440-43-9	
Calcium	70600 ug/L		400	20	08/31/11 09:23	09/01/11 21:30	7440-70-2	
Chromium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:25	7440-47-3	
Copper	0.96 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:25	7440-50-8	
Iron	143 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:25	7439-89-6	
Lead	0.10 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:25	7439-92-1	
Magnesium	8930 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:25	7439-95-4	
Manganese	278 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:25	7439-96-5	
Nickel	0.74 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:25	7440-02-0	
Potassium	1400 ug/L		20.0	1	08/31/11 09:23	09/06/11 10:25	7440-09-7	
Selenium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:25	7782-49-2	
Silver	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:25	7440-22-4	
Sodium	4380 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:25	7440-23-5	
Thallium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:25	7440-28-0	
Total Hardness by 2340B	213000 ug/L		1420	20	08/31/11 09:23	09/01/11 21:30		
Vanadium	0.14 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:25	7440-62-2	
Zinc	260 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:25	7440-66-6	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020						
Aluminum, Dissolved	13.0 ug/L		4.0	1	08/31/11 09:19	09/01/11 17:43	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 02:35	7440-36-0	
Arsenic, Dissolved	0.66 ug/L		0.50	1	08/31/11 09:19	09/01/11 02:35	7440-38-2	
Barium, Dissolved	56.6 ug/L		0.30	1	08/31/11 09:19	09/01/11 02:35	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/31/11 09:19	09/01/11 17:43	7440-41-7	
Cadmium, Dissolved	1.3 ug/L		0.080	1	08/31/11 09:19	09/01/11 02:35	7440-43-9	
Calcium, Dissolved	68700 ug/L		100	5	08/31/11 09:19	09/01/11 17:48	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 17:43	7440-47-3	
Copper, Dissolved	0.60 ug/L		0.50	1	08/31/11 09:19	09/01/11 02:35	7440-50-8	
Iron, Dissolved	54.5 ug/L		50.0	1	08/31/11 09:19	09/01/11 17:43	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 02:35	7439-92-1	
Magnesium, Dissolved	8260 ug/L		5.0	1	08/31/11 09:19	09/01/11 17:43	7439-95-4	
Manganese, Dissolved	273 ug/L		0.50	1	08/31/11 09:19	09/01/11 17:43	7439-96-5	
Nickel, Dissolved	0.81 ug/L		0.50	1	08/31/11 09:19	09/01/11 17:43	7440-02-0	
Potassium, Dissolved	1370 ug/L		20.0	1	08/31/11 09:19	09/01/11 17:43	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 02:35	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 02:35	7440-22-4	
Sodium, Dissolved	4190 ug/L		50.0	1	08/31/11 09:19	09/01/11 17:43	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 02:35	7440-28-0	
Vanadium, Dissolved	0.11 ug/L		0.10	1	08/31/11 09:19	09/01/11 17:43	7440-62-2	
Zinc, Dissolved	246 ug/L		5.0	1	08/31/11 09:19	09/01/11 02:35	7440-66-6	

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-7	Lab ID: 60104863002	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/31/11 17:19	09/01/11 10:53	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/11 14:34	08/31/11 16:43	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	414	umhos/cm	10.0	1		09/01/11 12:29		
Salinity	Analytical Method: Calculated							
Salinity (as dissolved solids)	265	mg/L	6.0	1		09/01/11 17:47		
Salinity (as seawater)	0.20	PSU	0.010	1		09/01/11 17:47		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	105	mg/L	20.0	1		08/31/11 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	264	mg/L	5.0	1		08/24/11 17:13		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	10	mg/L	5.0	1		08/24/11 17:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	114	mg/L	10.0	10		09/01/11 16:39	14808-79-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		08/30/11 19:42	57-12-5	

ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

Sample: DR-8	Lab ID: 60104863003	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020							
Aluminum	232 ug/L		4.0	1	08/31/11 09:23	09/06/11 10:29	7429-90-5	
Antimony	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:29	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:29	7440-38-2	
Barium	18.9 ug/L		0.30	1	08/31/11 09:23	09/06/11 10:29	7440-39-3	
Beryllium	0.51 ug/L		0.20	1	08/31/11 09:23	09/06/11 10:29	7440-41-7	
Cadmium	19.6 ug/L		0.080	1	08/31/11 09:23	09/06/11 10:29	7440-43-9	
Calcium	222000 ug/L		400	20	08/31/11 09:23	09/01/11 22:05	7440-70-2	
Chromium	0.56 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:29	7440-47-3	
Copper	39.0 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:29	7440-50-8	
Iron	4300 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:29	7439-89-6	
Lead	1.3 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:29	7439-92-1	
Magnesium	18800 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:29	7439-95-4	
Manganese	2490 ug/L		10.0	20	08/31/11 09:23	09/01/11 22:05	7439-96-5	
Nickel	7.1 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:29	7440-02-0	
Potassium	1560 ug/L		20.0	1	08/31/11 09:23	09/06/11 10:29	7440-09-7	
Selenium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:29	7782-49-2	
Silver	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:29	7440-22-4	
Sodium	8580 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:29	7440-23-5	
Thallium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:29	7440-28-0	
Total Hardness by 2340B	631000 ug/L		1420	20	08/31/11 09:23	09/01/11 22:05		
Vanadium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:29	7440-62-2	
Zinc	4150 ug/L		100	20	08/31/11 09:23	09/01/11 22:05	7440-66-6	
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020							
Aluminum, Dissolved	33.4 ug/L		4.0	1	08/31/11 09:19	09/01/11 17:51	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:21	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:21	7440-38-2	
Barium, Dissolved	18.1 ug/L		0.30	1	08/31/11 09:19	09/01/11 03:21	7440-39-3	
Beryllium, Dissolved	0.28 ug/L		0.20	1	08/31/11 09:19	09/01/11 17:51	7440-41-7	
Cadmium, Dissolved	19.0 ug/L		0.080	1	08/31/11 09:19	09/01/11 03:21	7440-43-9	
Calcium, Dissolved	270000 ug/L		1000	50	08/31/11 09:19	09/02/11 13:03	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 17:51	7440-47-3	
Copper, Dissolved	3.9 ug/L		0.50	1	08/31/11 09:19	09/01/11 03:21	7440-50-8	
Iron, Dissolved	1400 ug/L		50.0	1	08/31/11 09:19	09/01/11 17:51	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 03:21	7439-92-1	
Magnesium, Dissolved	17100 ug/L		5.0	1	08/31/11 09:19	09/01/11 17:51	7439-95-4	
Manganese, Dissolved	2910 ug/L		25.0	50	08/31/11 09:19	09/02/11 13:03	7439-96-5	
Nickel, Dissolved	6.9 ug/L		0.50	1	08/31/11 09:19	09/01/11 17:51	7440-02-0	
Potassium, Dissolved	1540 ug/L		20.0	1	08/31/11 09:19	09/01/11 17:51	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:21	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:21	7440-22-4	
Sodium, Dissolved	7920 ug/L		50.0	1	08/31/11 09:19	09/01/11 17:51	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 03:21	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 17:51	7440-62-2	
Zinc, Dissolved	4750 ug/L		250	50	08/31/11 09:19	09/02/11 13:03	7440-66-6	

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-8	Lab ID: 60104863003	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/31/11 17:19	09/01/11 10:55	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/11 14:34	08/31/11 16:50	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	1030	umhos/cm	10.0	1		09/01/11 12:29		
Salinity	Analytical Method: Calculated							
Salinity (as dissolved solids)	660	mg/L	6.0	1		09/01/11 17:47		
Salinity (as seawater)	0.51	PSU	0.010	1		09/01/11 17:47		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	95.7	mg/L	20.0	1		08/31/11 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	873	mg/L	5.0	1		08/24/11 17:13		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	14.0	mg/L	5.0	1		08/24/11 17:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	488	mg/L	50.0	50		08/30/11 19:10	14808-79-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		08/30/11 19:45	57-12-5	

ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-4-SW	Lab ID: 60104863004	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Aluminum	30.1 ug/L		4.0	1	08/31/11 09:23	09/06/11 10:34	7429-90-5	
Antimony	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:34	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:34	7440-38-2	
Barium	62.6 ug/L		0.30	1	08/31/11 09:23	09/06/11 10:34	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/31/11 09:23	09/06/11 10:34	7440-41-7	
Cadmium	0.78 ug/L		0.080	1	08/31/11 09:23	09/06/11 10:34	7440-43-9	
Calcium	60200 ug/L		400	20	08/31/11 09:23	09/01/11 22:13	7440-70-2	
Chromium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:34	7440-47-3	
Copper	0.82 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:34	7440-50-8	
Iron	98.5 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:34	7439-89-6	
Lead	0.22 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:34	7439-92-1	
Magnesium	7570 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:34	7439-95-4	
Manganese	173 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:34	7439-96-5	
Nickel	0.54 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:34	7440-02-0	
Potassium	1000 ug/L		20.0	1	08/31/11 09:23	09/06/11 10:34	7440-09-7	
Selenium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:34	7782-49-2	
Silver	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:34	7440-22-4	
Sodium	3170 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:34	7440-23-5	
Thallium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:34	7440-28-0	
Total Hardness by 2340B	182000 ug/L		1420	20	08/31/11 09:23	09/01/11 22:13		
Vanadium	0.15 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:34	7440-62-2	
Zinc	159 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:34	7440-66-6	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020						
Aluminum, Dissolved	13.6 ug/L		4.0	1	08/31/11 09:19	09/01/11 18:09	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:30	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:30	7440-38-2	
Barium, Dissolved	63.2 ug/L		0.30	1	08/31/11 09:19	09/01/11 03:30	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/31/11 09:19	09/01/11 18:09	7440-41-7	
Cadmium, Dissolved	0.69 ug/L		0.080	1	08/31/11 09:19	09/01/11 03:30	7440-43-9	
Calcium, Dissolved	59400 ug/L		100	5	08/31/11 09:19	09/01/11 18:13	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 18:09	7440-47-3	
Copper, Dissolved	0.70 ug/L		0.50	1	08/31/11 09:19	09/01/11 03:30	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/31/11 09:19	09/01/11 18:09	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 03:30	7439-92-1	
Magnesium, Dissolved	7060 ug/L		5.0	1	08/31/11 09:19	09/01/11 18:09	7439-95-4	
Manganese, Dissolved	170 ug/L		0.50	1	08/31/11 09:19	09/01/11 18:09	7439-96-5	
Nickel, Dissolved	0.86 ug/L		0.50	1	08/31/11 09:19	09/01/11 18:09	7440-02-0	
Potassium, Dissolved	988 ug/L		20.0	1	08/31/11 09:19	09/01/11 18:09	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:30	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:30	7440-22-4	
Sodium, Dissolved	2980 ug/L		50.0	1	08/31/11 09:19	09/01/11 18:09	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 03:30	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 18:09	7440-62-2	
Zinc, Dissolved	147 ug/L		5.0	1	08/31/11 09:19	09/01/11 03:30	7440-66-6	

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-4-SW	Lab ID: 60104863004	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/31/11 17:19	09/01/11 11:01	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/11 14:34	08/31/11 16:52	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	348	umhos/cm	10.0	1		09/01/11 12:29		
Salinity	Analytical Method: Calculated							
Salinity (as dissolved solids)	223	mg/L	6.0	1		09/01/11 17:47		
Salinity (as seawater)	0.17	PSU	0.010	1		09/01/11 17:47		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	110	mg/L	20.0	1		08/31/11 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	223	mg/L	5.0	1		08/24/11 17:13		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	ND	mg/L	5.0	1		08/24/11 17:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	82.7	mg/L	5.0	5		08/30/11 19:44	14808-79-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		08/30/11 19:46	57-12-5	

ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-G	Lab ID: 60104863005	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Aluminum	19.3 ug/L		4.0	1	08/31/11 09:23	09/06/11 10:39	7429-90-5	
Antimony	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:39	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:39	7440-38-2	
Barium	77.0 ug/L		0.30	1	08/31/11 09:23	09/06/11 10:39	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/31/11 09:23	09/06/11 10:39	7440-41-7	
Cadmium	0.52 ug/L		0.080	1	08/31/11 09:23	09/06/11 10:39	7440-43-9	
Calcium	61700 ug/L		400	20	08/31/11 09:23	09/01/11 22:21	7440-70-2	
Chromium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:39	7440-47-3	
Copper	0.68 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:39	7440-50-8	
Iron	51.4 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:39	7439-89-6	
Lead	0.15 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:39	7439-92-1	
Magnesium	7650 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:39	7439-95-4	
Manganese	91.0 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:39	7439-96-5	
Nickel	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:39	7440-02-0	
Potassium	981 ug/L		20.0	1	08/31/11 09:23	09/06/11 10:39	7440-09-7	
Selenium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:39	7782-49-2	
Silver	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:39	7440-22-4	
Sodium	3160 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:39	7440-23-5	
Thallium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:39	7440-28-0	
Total Hardness by 2340B	185000 ug/L		1420	20	08/31/11 09:23	09/01/11 22:21		
Vanadium	0.18 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:39	7440-62-2	
Zinc	107 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:39	7440-66-6	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020						
Aluminum, Dissolved	8.9 ug/L		4.0	1	08/31/11 09:19	09/01/11 18:17	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:49	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:49	7440-38-2	
Barium, Dissolved	77.1 ug/L		0.30	1	08/31/11 09:19	09/01/11 03:49	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/31/11 09:19	09/01/11 18:17	7440-41-7	
Cadmium, Dissolved	0.52 ug/L		0.080	1	08/31/11 09:19	09/01/11 03:49	7440-43-9	
Calcium, Dissolved	59100 ug/L		100	5	08/31/11 09:19	09/01/11 18:21	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 18:17	7440-47-3	
Copper, Dissolved	0.97 ug/L		0.50	1	08/31/11 09:19	09/01/11 03:49	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/31/11 09:19	09/01/11 18:17	7439-89-6	
Lead, Dissolved	0.11 ug/L		0.10	1	08/31/11 09:19	09/01/11 03:49	7439-92-1	
Magnesium, Dissolved	7070 ug/L		5.0	1	08/31/11 09:19	09/01/11 18:17	7439-95-4	
Manganese, Dissolved	86.9 ug/L		0.50	1	08/31/11 09:19	09/01/11 18:17	7439-96-5	
Nickel, Dissolved	0.72 ug/L		0.50	1	08/31/11 09:19	09/01/11 18:17	7440-02-0	
Potassium, Dissolved	965 ug/L		20.0	1	08/31/11 09:19	09/01/11 18:17	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:49	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:49	7440-22-4	
Sodium, Dissolved	3000 ug/L		50.0	1	08/31/11 09:19	09/01/11 18:17	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 03:49	7440-28-0	
Vanadium, Dissolved	0.13 ug/L		0.10	1	08/31/11 09:19	09/01/11 18:17	7440-62-2	
Zinc, Dissolved	94.8 ug/L		5.0	1	08/31/11 09:19	09/01/11 03:49	7440-66-6	

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-G	Lab ID: 60104863005	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/31/11 17:19	09/01/11 11:04	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/11 14:34	08/31/11 16:54	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	360	umhos/cm	10.0	1		09/01/11 12:29		
Salinity	Analytical Method: Calculated							
Salinity (as dissolved solids)	231	mg/L	6.0	1		09/01/11 17:47		
Salinity (as seawater)	0.17	PSU	0.010	1		09/01/11 17:47		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	109	mg/L	20.0	1		08/31/11 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	209	mg/L	5.0	1		08/24/11 17:13		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	ND	mg/L	5.0	1		08/24/11 17:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	78.9	mg/L	5.0	5		08/30/11 20:00	14808-79-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		08/30/11 19:47	57-12-5	

ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-1	Lab ID: 60104863006	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Aluminum	23.3 ug/L		4.0	1	08/31/11 09:23	09/06/11 10:44	7429-90-5	
Antimony	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:44	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:44	7440-38-2	
Barium	62.7 ug/L		0.30	1	08/31/11 09:23	09/06/11 10:44	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/31/11 09:23	09/06/11 10:44	7440-41-7	
Cadmium	ND ug/L		0.080	1	08/31/11 09:23	09/06/11 10:44	7440-43-9	
Calcium	36300 ug/L		400	20	08/31/11 09:23	09/01/11 22:29	7440-70-2	
Chromium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:44	7440-47-3	
Copper	0.51 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:44	7440-50-8	
Iron	ND ug/L		50.0	1	08/31/11 09:23	09/06/11 10:44	7439-89-6	
Lead	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:44	7439-92-1	
Magnesium	5290 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:44	7439-95-4	
Manganese	13.0 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:44	7439-96-5	
Nickel	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:44	7440-02-0	
Potassium	640 ug/L		20.0	1	08/31/11 09:23	09/06/11 10:44	7440-09-7	
Selenium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:44	7782-49-2	
Silver	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:44	7440-22-4	
Sodium	2040 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:44	7440-23-5	
Thallium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:44	7440-28-0	
Total Hardness by 2340B	112000 ug/L		1420	20	08/31/11 09:23	09/01/11 22:29		
Vanadium	0.15 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:44	7440-62-2	
Zinc	ND ug/L		5.0	1	08/31/11 09:23	09/06/11 10:44	7440-66-6	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020						
Aluminum, Dissolved	10.6 ug/L		4.0	1	08/31/11 09:19	09/01/11 18:25	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:58	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:58	7440-38-2	
Barium, Dissolved	65.6 ug/L		0.30	1	08/31/11 09:19	09/01/11 03:58	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/31/11 09:19	09/01/11 18:25	7440-41-7	
Cadmium, Dissolved	ND ug/L		0.080	1	08/31/11 09:19	09/01/11 03:58	7440-43-9	
Calcium, Dissolved	38700 ug/L		100	5	08/31/11 09:19	09/01/11 18:29	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 18:25	7440-47-3	
Copper, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:58	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/31/11 09:19	09/01/11 18:25	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 03:58	7439-92-1	
Magnesium, Dissolved	4940 ug/L		5.0	1	08/31/11 09:19	09/01/11 18:25	7439-95-4	
Manganese, Dissolved	11.0 ug/L		0.50	1	08/31/11 09:19	09/01/11 18:25	7439-96-5	
Nickel, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 18:25	7440-02-0	
Potassium, Dissolved	651 ug/L		20.0	1	08/31/11 09:19	09/01/11 18:25	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:58	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 03:58	7440-22-4	
Sodium, Dissolved	2040 ug/L		50.0	1	08/31/11 09:19	09/01/11 18:25	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 03:58	7440-28-0	
Vanadium, Dissolved	0.11 ug/L		0.10	1	08/31/11 09:19	09/01/11 18:25	7440-62-2	
Zinc, Dissolved	ND ug/L		5.0	1	08/31/11 09:19	09/01/11 03:58	7440-66-6	

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-1	Lab ID: 60104863006	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/31/11 17:19	09/01/11 11:06	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/11 14:34	08/31/11 16:56	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	224	umhos/cm	10.0	1		09/01/11 12:29		
Salinity	Analytical Method: Calculated							
Salinity (as dissolved solids)	144	mg/L	6.0	1		09/01/11 17:47		
Salinity (as seawater)	0.11	PSU	0.010	1		09/01/11 17:47		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	81.0	mg/L	20.0	1		08/31/11 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	118	mg/L	5.0	1		08/24/11 17:13		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	12.0	mg/L	5.0	1		08/24/11 17:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	38.7	mg/L	2.0	2		08/30/11 20:17	14808-79-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		08/30/11 19:49	57-12-5	

ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-2	Lab ID: 60104863007	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Aluminum	26.3 ug/L		4.0	1	08/31/11 09:23	09/06/11 10:48	7429-90-5	
Antimony	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:48	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:48	7440-38-2	
Barium	62.0 ug/L		0.30	1	08/31/11 09:23	09/06/11 10:48	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/31/11 09:23	09/06/11 10:48	7440-41-7	
Cadmium	ND ug/L		0.080	1	08/31/11 09:23	09/06/11 10:48	7440-43-9	
Calcium	44700 ug/L		400	20	08/31/11 09:23	09/01/11 22:38	7440-70-2	
Chromium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:48	7440-47-3	
Copper	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:48	7440-50-8	
Iron	ND ug/L		50.0	1	08/31/11 09:23	09/06/11 10:48	7439-89-6	
Lead	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:48	7439-92-1	
Magnesium	5920 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:48	7439-95-4	
Manganese	80.9 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:48	7439-96-5	
Nickel	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:48	7440-02-0	
Potassium	721 ug/L		20.0	1	08/31/11 09:23	09/06/11 10:48	7440-09-7	
Selenium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:48	7782-49-2	
Silver	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:48	7440-22-4	
Sodium	2290 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:48	7440-23-5	
Thallium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:48	7440-28-0	
Total Hardness by 2340B	136000 ug/L		1420	20	08/31/11 09:23	09/01/11 22:38		
Vanadium	0.16 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:48	7440-62-2	
Zinc	ND ug/L		5.0	1	08/31/11 09:23	09/06/11 10:48	7440-66-6	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020						
Aluminum, Dissolved	10.5 ug/L		4.0	1	08/31/11 09:19	09/01/11 18:33	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:07	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:07	7440-38-2	
Barium, Dissolved	63.2 ug/L		0.30	1	08/31/11 09:19	09/01/11 04:07	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/31/11 09:19	09/01/11 18:33	7440-41-7	
Cadmium, Dissolved	ND ug/L		0.080	1	08/31/11 09:19	09/01/11 04:07	7440-43-9	
Calcium, Dissolved	46100 ug/L		100	5	08/31/11 09:19	09/01/11 18:37	7440-70-2	
Chromium, Dissolved	0.56 ug/L		0.50	1	08/31/11 09:19	09/01/11 18:33	7440-47-3	
Copper, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:07	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/31/11 09:19	09/01/11 18:33	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 04:07	7439-92-1	
Magnesium, Dissolved	5580 ug/L		5.0	1	08/31/11 09:19	09/01/11 18:33	7439-95-4	
Manganese, Dissolved	81.5 ug/L		0.50	1	08/31/11 09:19	09/01/11 18:33	7439-96-5	
Nickel, Dissolved	0.54 ug/L		0.50	1	08/31/11 09:19	09/01/11 18:33	7440-02-0	
Potassium, Dissolved	732 ug/L		20.0	1	08/31/11 09:19	09/01/11 18:33	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:07	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:07	7440-22-4	
Sodium, Dissolved	2260 ug/L		50.0	1	08/31/11 09:19	09/01/11 18:33	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 04:07	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 18:33	7440-62-2	
Zinc, Dissolved	5.8 ug/L		5.0	1	08/31/11 09:19	09/01/11 04:07	7440-66-6	

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-2	Lab ID: 60104863007	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/31/11 17:19	09/01/11 11:08	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/11 14:34	08/31/11 16:48	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	256	umhos/cm	10.0	1		09/01/11 12:29		
Salinity	Analytical Method: Calculated							
Salinity (as dissolved solids)	164	mg/L	6.0	1		09/01/11 17:47		
Salinity (as seawater)	0.12	PSU	0.010	1		09/01/11 17:47		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	79.1	mg/L	20.0	1		08/31/11 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	167	mg/L	5.0	1		08/24/11 17:13		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	7.0	mg/L	5.0	1		08/24/11 17:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	51.5	mg/L	5.0	5		09/01/11 18:01	14808-79-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		08/30/11 19:50	57-12-5	

ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

Sample: DR-3	Lab ID: 60104863008	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020							
Aluminum	230 ug/L		4.0	1	08/31/11 09:23	09/06/11 10:53	7429-90-5	
Antimony	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:53	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:53	7440-38-2	
Barium	18.6 ug/L		0.30	1	08/31/11 09:23	09/06/11 10:53	7440-39-3	
Beryllium	0.42 ug/L		0.20	1	08/31/11 09:23	09/06/11 10:53	7440-41-7	
Cadmium	19.2 ug/L		0.080	1	08/31/11 09:23	09/06/11 10:53	7440-43-9	
Calcium	217000 ug/L		400	20	08/31/11 09:23	09/01/11 22:58	7440-70-2	
Chromium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:53	7440-47-3	
Copper	38.4 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:53	7440-50-8	
Iron	4250 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:53	7439-89-6	
Lead	1.3 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:53	7439-92-1	
Magnesium	18600 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:53	7439-95-4	
Manganese	2440 ug/L		10.0	20	08/31/11 09:23	09/01/11 22:58	7439-96-5	
Nickel	6.8 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:53	7440-02-0	
Potassium	1540 ug/L		20.0	1	08/31/11 09:23	09/06/11 10:53	7440-09-7	
Selenium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:53	7782-49-2	
Silver	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:53	7440-22-4	
Sodium	8500 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:53	7440-23-5	
Thallium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:53	7440-28-0	
Total Hardness by 2340B	619000 ug/L		1420	20	08/31/11 09:23	09/01/11 22:58		
Vanadium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:53	7440-62-2	
Zinc	4070 ug/L		100	20	08/31/11 09:23	09/01/11 22:58	7440-66-6	
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020							
Aluminum, Dissolved	29.2 ug/L		4.0	1	08/31/11 09:19	09/01/11 18:41	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:16	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:16	7440-38-2	
Barium, Dissolved	19.2 ug/L		0.30	1	08/31/11 09:19	09/01/11 04:16	7440-39-3	
Beryllium, Dissolved	0.23 ug/L		0.20	1	08/31/11 09:19	09/01/11 18:41	7440-41-7	
Cadmium, Dissolved	19.4 ug/L		0.080	1	08/31/11 09:19	09/01/11 04:16	7440-43-9	
Calcium, Dissolved	262000 ug/L		400	20	08/31/11 09:19	09/02/11 13:07	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 18:41	7440-47-3	
Copper, Dissolved	4.4 ug/L		0.50	1	08/31/11 09:19	09/01/11 04:16	7440-50-8	
Iron, Dissolved	1500 ug/L		50.0	1	08/31/11 09:19	09/01/11 18:41	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 04:16	7439-92-1	
Magnesium, Dissolved	17400 ug/L		5.0	1	08/31/11 09:19	09/01/11 18:41	7439-95-4	
Manganese, Dissolved	2920 ug/L		10.0	20	08/31/11 09:19	09/02/11 13:07	7439-96-5	
Nickel, Dissolved	7.5 ug/L		0.50	1	08/31/11 09:19	09/01/11 18:41	7440-02-0	
Potassium, Dissolved	1600 ug/L		20.0	1	08/31/11 09:19	09/01/11 18:41	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:16	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:16	7440-22-4	
Sodium, Dissolved	8200 ug/L		50.0	1	08/31/11 09:19	09/01/11 18:41	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 04:16	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 18:41	7440-62-2	
Zinc, Dissolved	4630 ug/L		100	20	08/31/11 09:19	09/02/11 13:07	7440-66-6	

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-3	Lab ID: 60104863008	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/31/11 17:19	09/01/11 11:14	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/11 14:34	08/31/11 15:05	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	1070	umhos/cm	10.0	1		09/01/11 12:29		
Salinity	Analytical Method: Calculated							
Salinity (as dissolved solids)	683	mg/L	6.0	1		09/01/11 17:47		
Salinity (as seawater)	0.53	PSU	0.010	1		09/01/11 17:47		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	95.7	mg/L	20.0	1		08/31/11 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	888	mg/L	5.0	1		08/24/11 17:14		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	18.0	mg/L	5.0	1		08/24/11 17:09		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	512	mg/L	50.0	50		08/30/11 20:50	14808-79-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		08/30/11 19:50	57-12-5	

ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-4	Lab ID: 60104863009	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020							
Aluminum	160 ug/L		4.0	1	08/31/11 09:23	09/06/11 10:58	7429-90-5	
Antimony	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:58	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:58	7440-38-2	
Barium	18.9 ug/L		0.30	1	08/31/11 09:23	09/06/11 10:58	7440-39-3	
Beryllium	0.32 ug/L		0.20	1	08/31/11 09:23	09/06/11 10:58	7440-41-7	
Cadmium	18.4 ug/L		0.080	1	08/31/11 09:23	09/06/11 10:58	7440-43-9	
Calcium	228000 ug/L		400	20	08/31/11 09:23	09/01/11 23:07	7440-70-2	
Chromium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:58	7440-47-3	
Copper	27.0 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:58	7440-50-8	
Iron	2960 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:58	7439-89-6	
Lead	0.90 ug/L		0.10	1	08/31/11 09:23	09/06/11 10:58	7439-92-1	
Magnesium	18900 ug/L		5.0	1	08/31/11 09:23	09/06/11 10:58	7439-95-4	
Manganese	2490 ug/L		10.0	20	08/31/11 09:23	09/01/11 23:07	7439-96-5	
Nickel	6.7 ug/L		0.50	1	08/31/11 09:23	09/06/11 10:58	7440-02-0	
Potassium	1580 ug/L		20.0	1	08/31/11 09:23	09/06/11 10:58	7440-09-7	
Selenium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:58	7782-49-2	
Silver	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 10:58	7440-22-4	
Sodium	8650 ug/L		50.0	1	08/31/11 09:23	09/06/11 10:58	7440-23-5	
Thallium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:58	7440-28-0	
Total Hardness by 2340B	647000 ug/L		1420	20	08/31/11 09:23	09/01/11 23:07		
Vanadium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 10:58	7440-62-2	
Zinc	4040 ug/L		100	20	08/31/11 09:23	09/01/11 23:07	7440-66-6	
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020							
Aluminum, Dissolved	4.4 ug/L		4.0	1	08/31/11 09:19	09/01/11 18:59	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:26	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:26	7440-38-2	
Barium, Dissolved	17.9 ug/L		0.30	1	08/31/11 09:19	09/01/11 04:26	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/31/11 09:19	09/01/11 18:59	7440-41-7	
Cadmium, Dissolved	15.7 ug/L		0.080	1	08/31/11 09:19	09/01/11 04:26	7440-43-9	
Calcium, Dissolved	218000 ug/L		200	10	08/31/11 09:19	09/01/11 19:03	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 18:59	7440-47-3	
Copper, Dissolved	1.5 ug/L		0.50	1	08/31/11 09:19	09/01/11 04:26	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/31/11 09:19	09/01/11 18:59	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 04:26	7439-92-1	
Magnesium, Dissolved	16800 ug/L		5.0	1	08/31/11 09:19	09/01/11 18:59	7439-95-4	
Manganese, Dissolved	2320 ug/L		5.0	10	08/31/11 09:19	09/01/11 19:03	7439-96-5	
Nickel, Dissolved	7.0 ug/L		0.50	1	08/31/11 09:19	09/01/11 18:59	7440-02-0	
Potassium, Dissolved	1540 ug/L		20.0	1	08/31/11 09:19	09/01/11 18:59	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:26	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:26	7440-22-4	
Sodium, Dissolved	7920 ug/L		50.0	1	08/31/11 09:19	09/01/11 18:59	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 04:26	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 18:59	7440-62-2	
Zinc, Dissolved	3160 ug/L		50.0	10	08/31/11 09:19	09/01/11 19:03	7440-66-6	

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

Sample: DR-4	Lab ID: 60104863009	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/31/11 17:19	09/01/11 11:16	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/11 14:34	08/31/11 17:06	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	1020	umhos/cm	10.0	1		09/01/11 12:29		
Salinity	Analytical Method: Calculated							
Salinity (as dissolved solids)	654	mg/L	6.0	1		09/01/11 17:47		
Salinity (as seawater)	0.50	PSU	0.010	1		09/01/11 17:47		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	93.8	mg/L	20.0	1		08/31/11 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	860	mg/L	5.0	1		08/24/11 17:14		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	20.0	mg/L	5.0	1		08/24/11 17:10		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	492	mg/L	50.0	50		08/30/11 21:39	14808-79-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		08/30/11 19:54	57-12-5	

ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-5	Lab ID: 60104863010	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS		Analytical Method: EPA 6020						
Aluminum	72.6 ug/L		4.0	1	08/31/11 09:23	09/06/11 11:22	7429-90-5	
Antimony	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:22	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:22	7440-38-2	
Barium	18.6 ug/L		0.30	1	08/31/11 09:23	09/06/11 11:22	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/31/11 09:23	09/06/11 11:22	7440-41-7	
Cadmium	15.9 ug/L		0.080	1	08/31/11 09:23	09/06/11 11:22	7440-43-9	
Calcium	225000 ug/L		400	20	08/31/11 09:23	09/01/11 23:15	7440-70-2	
Chromium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:22	7440-47-3	
Copper	12.0 ug/L		0.50	1	08/31/11 09:23	09/06/11 11:22	7440-50-8	
Iron	1240 ug/L		50.0	1	08/31/11 09:23	09/06/11 11:22	7439-89-6	
Lead	0.35 ug/L		0.10	1	08/31/11 09:23	09/06/11 11:22	7439-92-1	
Magnesium	19400 ug/L		5.0	1	08/31/11 09:23	09/06/11 11:22	7439-95-4	
Manganese	2210 ug/L		10.0	20	08/31/11 09:23	09/01/11 23:15	7439-96-5	
Nickel	6.2 ug/L		0.50	1	08/31/11 09:23	09/06/11 11:22	7440-02-0	
Potassium	1730 ug/L		20.0	1	08/31/11 09:23	09/06/11 11:22	7440-09-7	
Selenium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:22	7782-49-2	
Silver	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:22	7440-22-4	
Sodium	8920 ug/L		50.0	1	08/31/11 09:23	09/06/11 11:22	7440-23-5	
Thallium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 11:22	7440-28-0	
Total Hardness by 2340B	642000 ug/L		1420	20	08/31/11 09:23	09/01/11 23:15		
Vanadium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 11:22	7440-62-2	
Zinc	3210 ug/L		100	20	08/31/11 09:23	09/01/11 23:15	7440-66-6	
6020 MET ICPMS, Dissolved		Analytical Method: EPA 6020						
Aluminum, Dissolved	ND ug/L		4.0	1	08/31/11 09:19	09/01/11 19:07	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:44	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:44	7440-38-2	
Barium, Dissolved	18.0 ug/L		0.30	1	08/31/11 09:19	09/01/11 04:44	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/31/11 09:19	09/01/11 19:07	7440-41-7	
Cadmium, Dissolved	13.9 ug/L		0.080	1	08/31/11 09:19	09/01/11 04:44	7440-43-9	
Calcium, Dissolved	220000 ug/L		200	10	08/31/11 09:19	09/01/11 19:11	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 19:07	7440-47-3	
Copper, Dissolved	1.5 ug/L		0.50	1	08/31/11 09:19	09/01/11 04:44	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/31/11 09:19	09/01/11 19:07	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/02/11 13:11	7439-92-1	
Magnesium, Dissolved	17300 ug/L		5.0	1	08/31/11 09:19	09/01/11 19:07	7439-95-4	
Manganese, Dissolved	2140 ug/L		5.0	10	08/31/11 09:19	09/01/11 19:11	7439-96-5	
Nickel, Dissolved	6.7 ug/L		0.50	1	08/31/11 09:19	09/01/11 19:07	7440-02-0	
Potassium, Dissolved	1700 ug/L		20.0	1	08/31/11 09:19	09/01/11 19:07	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:44	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:44	7440-22-4	
Sodium, Dissolved	8240 ug/L		50.0	1	08/31/11 09:19	09/01/11 19:07	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 04:44	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 19:07	7440-62-2	
Zinc, Dissolved	2650 ug/L		50.0	10	08/31/11 09:19	09/01/11 19:11	7440-66-6	

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: DR-5	Lab ID: 60104863010	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/31/11 17:19	09/01/11 11:18	7439-97-6	
7470 Mercury, Dissolved	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/11 14:34	08/31/11 17:08	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	1100	umhos/cm	10.0	1		09/01/11 12:29		
Salinity	Analytical Method: Calculated							
Salinity (as dissolved solids)	705	mg/L	6.0	1		09/01/11 17:47		
Salinity (as seawater)	0.54	PSU	0.010	1		09/01/11 17:47		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	105	mg/L	20.0	1		08/31/11 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	909	mg/L	5.0	1		08/24/11 17:14		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	ND	mg/L	5.0	1		08/24/11 17:10		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	517	mg/L	50.0	50		08/30/11 21:56	14808-79-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		08/30/11 19:55	57-12-5	

ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: FB	Lab ID: 60104863011	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020							
Aluminum	ND ug/L		4.0	1	08/31/11 09:23	09/06/11 11:26	7429-90-5	
Antimony	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:26	7440-36-0	
Arsenic	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:26	7440-38-2	
Barium	ND ug/L		0.30	1	08/31/11 09:23	09/06/11 11:26	7440-39-3	
Beryllium	ND ug/L		0.20	1	08/31/11 09:23	09/06/11 11:26	7440-41-7	
Cadmium	ND ug/L		0.080	1	08/31/11 09:23	09/06/11 11:26	7440-43-9	
Calcium	ND ug/L		20.0	1	08/31/11 09:23	09/06/11 11:26	7440-70-2	
Chromium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:26	7440-47-3	
Copper	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:26	7440-50-8	
Iron	ND ug/L		50.0	1	08/31/11 09:23	09/06/11 11:26	7439-89-6	
Lead	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 11:26	7439-92-1	
Magnesium	ND ug/L		5.0	1	08/31/11 09:23	09/06/11 11:26	7439-95-4	
Manganese	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:26	7439-96-5	
Nickel	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:26	7440-02-0	
Potassium	ND ug/L		20.0	1	08/31/11 09:23	09/06/11 11:26	7440-09-7	
Selenium	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:26	7782-49-2	
Silver	ND ug/L		0.50	1	08/31/11 09:23	09/06/11 11:26	7440-22-4	
Sodium	ND ug/L		50.0	1	08/31/11 09:23	09/06/11 11:26	7440-23-5	
Thallium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 11:26	7440-28-0	
Total Hardness by 2340B	ND ug/L		71.0	1	08/31/11 09:23	09/06/11 11:26		
Vanadium	ND ug/L		0.10	1	08/31/11 09:23	09/06/11 11:26	7440-62-2	
Zinc	ND ug/L		5.0	1	08/31/11 09:23	09/06/11 11:26	7440-66-6	
6020 MET ICPMS, Dissolved	Analytical Method: EPA 6020							
Aluminum, Dissolved	ND ug/L		4.0	1	08/31/11 09:19	09/01/11 19:15	7429-90-5	
Antimony, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:54	7440-36-0	
Arsenic, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:54	7440-38-2	
Barium, Dissolved	ND ug/L		0.30	1	08/31/11 09:19	09/01/11 04:54	7440-39-3	
Beryllium, Dissolved	ND ug/L		0.20	1	08/31/11 09:19	09/01/11 19:15	7440-41-7	
Cadmium, Dissolved	ND ug/L		0.080	1	08/31/11 09:19	09/01/11 04:54	7440-43-9	
Calcium, Dissolved	84.6 ug/L		20.0	1	08/31/11 09:19	09/01/11 19:15	7440-70-2	
Chromium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 19:15	7440-47-3	
Copper, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:54	7440-50-8	
Iron, Dissolved	ND ug/L		50.0	1	08/31/11 09:19	09/01/11 19:15	7439-89-6	
Lead, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/02/11 13:16	7439-92-1	
Magnesium, Dissolved	9.3 ug/L		5.0	1	08/31/11 09:19	09/01/11 19:15	7439-95-4	
Manganese, Dissolved	0.90 ug/L		0.50	1	08/31/11 09:19	09/01/11 19:15	7439-96-5	
Nickel, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 19:15	7440-02-0	
Potassium, Dissolved	ND ug/L		20.0	1	08/31/11 09:19	09/01/11 19:15	7440-09-7	
Selenium, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:54	7782-49-2	
Silver, Dissolved	ND ug/L		0.50	1	08/31/11 09:19	09/01/11 04:54	7440-22-4	
Sodium, Dissolved	ND ug/L		50.0	1	08/31/11 09:19	09/01/11 19:15	7440-23-5	
Thallium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 04:54	7440-28-0	
Vanadium, Dissolved	ND ug/L		0.10	1	08/31/11 09:19	09/01/11 19:15	7440-62-2	
Zinc, Dissolved	ND ug/L		5.0	1	08/31/11 09:19	09/01/11 04:54	7440-66-6	

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ANALYTICAL RESULTS

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Sample: FB	Lab ID: 60104863011	Collected: 08/17/11 08:00	Received: 08/23/11 10:30	Matrix: Water				
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470 Mercury	Analytical Method: EPA 7470							
Mercury	ND	ug/L	0.20	1	08/31/11 17:19	09/01/11 11:20	7439-97-6	M1
7470 Mercury, Dissolved	Analytical Method: EPA 7470							
Mercury, Dissolved	ND	ug/L	0.20	1	08/29/11 14:34	08/31/11 17:10	7439-97-6	
2510B Specific Conductance	Analytical Method: SM 2510B							
Specific Conductance	3200	umhos/cm	10.0	1		09/01/11 12:29		
Salinity	Analytical Method: Calculated							
Salinity (as dissolved solids)	2050	mg/L	6.0	1		09/01/11 17:47		
Salinity (as seawater)	1.7	PSU	0.010	1		09/01/11 17:47		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	ND	mg/L	20.0	1		08/31/11 17:10		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	ND	mg/L	5.0	1		08/24/11 17:14		
2540D Total Suspended Solids	Analytical Method: SM 2540D							
Total Suspended Solids	ND	mg/L	5.0	1		08/24/11 17:10		
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0							
Sulfate	ND	mg/L	1.0	1		08/30/11 22:13	14808-79-8	
4500CNE Cyanide, Total	Analytical Method: SM 4500-CN-E							
Cyanide	ND	mg/L	0.0050	1		08/30/11 19:55	57-12-5	

Appendix D
Laboratory QC Results

QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

QC Batch:	ICPM/28051	Analysis Method:	EPA 6020
QC Batch Method:	EPA 6020	Analysis Description:	6020 MET
Associated Lab Samples:	60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007, 60104863008, 60104863009, 60104863010, 60104863011		

METHOD BLANK: 1043331 Matrix: Water

Associated Lab Samples: 60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007,
60104863008, 60104863009, 60104863010, 60104863011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum	ug/L	ND	4.0	09/06/11 09:51	
Antimony	ug/L	ND	0.50	09/06/11 09:51	
Arsenic	ug/L	ND	0.50	09/06/11 09:51	
Barium	ug/L	ND	0.30	09/06/11 09:51	
Beryllium	ug/L	ND	0.20	09/06/11 09:51	
Cadmium	ug/L	ND	0.080	09/06/11 09:51	
Calcium	ug/L	ND	20.0	09/06/11 09:51	
Chromium	ug/L	ND	0.50	09/06/11 09:51	
Copper	ug/L	ND	0.50	09/06/11 09:51	
Iron	ug/L	ND	50.0	09/06/11 09:51	
Lead	ug/L	ND	0.10	09/06/11 09:51	
Magnesium	ug/L	ND	5.0	09/06/11 09:51	
Manganese	ug/L	ND	0.50	09/06/11 09:51	
Nickel	ug/L	ND	0.50	09/06/11 09:51	
Potassium	ug/L	ND	20.0	09/06/11 09:51	
Selenium	ug/L	ND	0.50	09/06/11 09:51	
Silver	ug/L	ND	0.50	09/06/11 09:51	
Sodium	ug/L	ND	50.0	09/06/11 09:51	
Thallium	ug/L	ND	0.10	09/06/11 09:51	
Total Hardness by 2340B	ug/L	ND	71.0	09/06/11 09:51	
Vanadium	ug/L	ND	0.10	09/06/11 09:51	
Zinc	ug/L	ND	5.0	09/06/11 09:51	

LABORATORY CONTROL SAMPLE: 1043332

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	80	85.7	107	80-120	
Antimony	ug/L	80	78.4	98	80-120	
Arsenic	ug/L	80	81.1	101	80-120	
Barium	ug/L	80	79.5	99	80-120	
Beryllium	ug/L	80	76.7	96	80-120	
Cadmium	ug/L	80	79.3	99	80-120	
Calcium	ug/L	1000	1060	106	80-120	
Chromium	ug/L	80	79.3	99	80-120	
Copper	ug/L	80	82.8	103	80-120	
Iron	ug/L	1000	998	100	80-120	
Lead	ug/L	80	79.5	99	80-120	
Magnesium	ug/L	1000	1040	104	80-120	
Manganese	ug/L	80	79.1	99	80-120	
Nickel	ug/L	80	83.7	105	80-120	

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QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

LABORATORY CONTROL SAMPLE: 1043332

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Potassium	ug/L	1000	1020	102	80-120	
Selenium	ug/L	80	81.2	101	80-120	
Silver	ug/L	80	70.4	88	80-120	
Sodium	ug/L	1000	1010	101	80-120	
Thallium	ug/L	80	79.1	99	80-120	
Total Hardness by 2340B	ug/L		6940			
Vanadium	ug/L	80	78.6	98	80-120	
Zinc	ug/L	80	80.9	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1043333 1043334

Parameter	Units	MS		MSD		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		60104863001	Spike Conc.	Spike Conc.	Result								
Aluminum	ug/L	27.8	80	80	144	160	145	165	75-125	11	20	M1	
Antimony	ug/L	ND	80	80	94.4	106	118	132	75-125	11	20	M1	
Arsenic	ug/L	ND	80	80	97.2	110	122	137	75-125	12	20	M1	
Barium	ug/L	19.8	80	80	118	131	123	139	75-125	10	20	M1	
Beryllium	ug/L	ND	80	80	87.4	88.5	109	111	75-125	1	20		
Cadmium	ug/L	14.4	80	80	112	121	122	133	75-125	8	20	M1	
Calcium	ug/L	242000	1000	1000	268000	295000	2540	5250	75-125	10	20	E,M1	
Chromium	ug/L	ND	80	80	95.2	105	119	130	75-125	10	20	M1	
Copper	ug/L	5.3	80	80	105	115	125	137	75-125	8	20	M1	
Iron	ug/L	503	1000	1000	1780	1980	128	148	75-125	11	20	M1	
Lead	ug/L	0.27	80	80	94.6	103	118	128	75-125	8	20	M1	
Magnesium	ug/L	22000	1000	1000	28100	31000	612	909	75-125	10	20	M1	
Manganese	ug/L	1970	80	80	2380	2630	512	826	75-125	10	20	E,M1	
Nickel	ug/L	5.8	80	80	105	118	125	140	75-125	11	20	M1	
Potassium	ug/L	2310	1000	1000	4040	4400	174	209	75-125	8	20	M1	
Selenium	ug/L	ND	80	80	96.4	103	120	129	75-125	7	20	M1	
Silver	ug/L	ND	80	80	84.0	90.7	105	113	75-125	8	20		
Sodium	ug/L	10900	1000	1000	14500	15800	358	496	75-125	9	20	M1	
Thallium	ug/L	ND	80	80	94.6	103	118	129	75-125	9	20	M1	
Total Hardness by 2340B	ug/L	695000			784000	864000				10	20		
Vanadium	ug/L	ND	80	80	93.1	103	116	128	75-125	10	20	M1	
Zinc	ug/L	2860	80	80	3420	3780	706	1150	75-125	10	20	E,M1	

MATRIX SPIKE SAMPLE: 1043335

Parameter	Units	10167643001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	87.6	80	285	247	75-125	M1
Antimony	ug/L	<0.070	80	89.5	112	75-125	
Arsenic	ug/L	3.9	80	97.0	116	75-125	
Barium	ug/L	782	80	946	206	75-125	M1
Beryllium	ug/L	<0.020	80	75.6	95	75-125	
Cadmium	ug/L	<0.030	80	91.4	114	75-125	

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QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

MATRIX SPIKE SAMPLE:	1043335						
Parameter	Units	10167643001	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Calcium	ug/L	130000	1000	138000	800	75-125	E,M1
Chromium	ug/L	0.81	80	90.8	112	75-125	
Copper	ug/L	0.52	80	92.8	115	75-125	
Iron	ug/L	12900	1000	15800	294	75-125	M1
Lead	ug/L	0.90	80	90.9	112	75-125	
Magnesium	ug/L	11200	1000	14000	286	75-125	M1
Manganese	ug/L	1900	80	2150	311	75-125	M1
Nickel	ug/L	7.5	80	101	117	75-125	
Potassium	ug/L	3830	1000	5510	168	75-125	M1
Selenium	ug/L	<0.22	80	92.6	116	75-125	
Silver	ug/L	<0.070	80	39.9	50	75-125	M1
Sodium	ug/L	24800	1000	30200	538	75-125	M1
Thallium	ug/L	<0.050	80	89.0	111	75-125	
Total Hardness by 2340B	ug/L	371000		403000			
Vanadium	ug/L	0.56	80	90.5	112	75-125	
Zinc	ug/L	26.4	80	121	118	75-125	

QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

QC Batch:	ICPM/28049	Analysis Method:	EPA 6020
QC Batch Method:	EPA 6020	Analysis Description:	6020 MET Dissolved
Associated Lab Samples:	60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007, 60104863008		

METHOD BLANK:	1043321	Matrix:	Water
Associated Lab Samples:	60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007, 60104863008, 60104863009, 60104863010, 60104863011		

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	ND	4.0	09/01/11 17:17	
Antimony, Dissolved	ug/L	ND	0.50	09/01/11 02:53	
Arsenic, Dissolved	ug/L	ND	0.50	09/01/11 02:53	
Barium, Dissolved	ug/L	ND	0.30	09/01/11 02:53	
Beryllium, Dissolved	ug/L	ND	0.20	09/01/11 17:17	
Cadmium, Dissolved	ug/L	ND	0.080	09/01/11 02:53	
Calcium, Dissolved	ug/L	ND	20.0	09/01/11 17:17	
Chromium, Dissolved	ug/L	ND	0.50	09/01/11 17:17	
Copper, Dissolved	ug/L	ND	0.50	09/01/11 02:53	
Iron, Dissolved	ug/L	ND	50.0	09/01/11 17:17	
Lead, Dissolved	ug/L	ND	0.10	09/01/11 02:53	
Magnesium, Dissolved	ug/L	ND	5.0	09/01/11 17:17	
Manganese, Dissolved	ug/L	ND	0.50	09/01/11 17:17	
Nickel, Dissolved	ug/L	ND	0.50	09/01/11 17:17	
Potassium, Dissolved	ug/L	ND	20.0	09/01/11 17:17	
Selenium, Dissolved	ug/L	ND	0.50	09/01/11 02:53	
Silver, Dissolved	ug/L	ND	0.50	09/01/11 02:53	
Sodium, Dissolved	ug/L	ND	50.0	09/01/11 17:17	
Thallium, Dissolved	ug/L	ND	0.10	09/01/11 02:53	
Vanadium, Dissolved	ug/L	ND	0.10	09/01/11 17:17	
Zinc, Dissolved	ug/L	ND	5.0	09/01/11 02:53	

LABORATORY CONTROL SAMPLE: 1043322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	80	80.7	101	85-115	
Antimony, Dissolved	ug/L	80	79.5	99	85-115	
Arsenic, Dissolved	ug/L	80	78.4	98	85-115	
Barium, Dissolved	ug/L	80	82.1	103	85-115	
Beryllium, Dissolved	ug/L	80	76.3	95	85-115	
Cadmium, Dissolved	ug/L	80	82.0	103	85-115	
Calcium, Dissolved	ug/L	1000	1060	106	85-115	
Chromium, Dissolved	ug/L	80	81.3	102	85-115	
Copper, Dissolved	ug/L	80	79.8	100	85-115	
Iron, Dissolved	ug/L	1000	1020	102	85-115	
Lead, Dissolved	ug/L	80	85.6	107	85-115	
Magnesium, Dissolved	ug/L	1000	1020	102	85-115	
Manganese, Dissolved	ug/L	80	80.8	101	85-115	
Nickel, Dissolved	ug/L	80	85.3	107	85-115	
Potassium, Dissolved	ug/L	1000	1020	102	85-115	

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QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

LABORATORY CONTROL SAMPLE: 1043322

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Selenium, Dissolved	ug/L	80	80.4	101	85-115	
Silver, Dissolved	ug/L	80	70.4	88	85-115	
Sodium, Dissolved	ug/L	1000	998	100	85-115	
Thallium, Dissolved	ug/L	80	86.6	108	85-115	
Vanadium, Dissolved	ug/L	80	81.6	102	85-115	
Zinc, Dissolved	ug/L	80	82.8	104	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1043323 1043324

Parameter	Units	MS Spike		MSD Spike		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max	
		60104863001	Result	Conc.	Conc.						RPD	RPD
Aluminum, Dissolved	ug/L	ND	80	80	84.3	80.8	101	97	70-130	4	20	
Antimony, Dissolved	ug/L	ND	80	80	88.6	86.4	110	107	70-130	3	20	
Arsenic, Dissolved	ug/L	ND	80	80	89.4	86.2	112	108	70-130	4	20	
Barium, Dissolved	ug/L	19.4	80	80	111	111	115	114	70-130	.5	20	
Beryllium, Dissolved	ug/L	ND	80	80	71.8	67.8	90	85	70-130	6	20	
Cadmium, Dissolved	ug/L	13.8	80	80	106	104	115	113	70-130	1	20	
Calcium, Dissolved	ug/L	269000	1000	1000	231000	226000	-3780	-4280	70-130	2	20 E,M1	
Chromium, Dissolved	ug/L	ND	80	80	82.6	78.4	103	97	70-130	5	20	
Copper, Dissolved	ug/L	1.5	80	80	89.8	86.4	110	106	70-130	4	20	
Iron, Dissolved	ug/L	ND	1000	1000	1010	966	100	96	70-130	5	20	
Lead, Dissolved	ug/L	ND	80	80	92.7	90.6	116	113	70-130	2	20	
Magnesium, Dissolved	ug/L	19400	1000	1000	22100	21400	264	191	70-130	3	20 M1	
Manganese, Dissolved	ug/L	1880	80	80	1980	1940	121	66	70-130	2	20 M1	
Nickel, Dissolved	ug/L	6.0	80	80	91.2	90.8	106	106	70-130	.4	20	
Potassium, Dissolved	ug/L	2230	1000	1000	3310	3210	108	97	70-130	3	20	
Selenium, Dissolved	ug/L	ND	80	80	86.2	84.6	108	106	70-130	2	20	
Silver, Dissolved	ug/L	ND	80	80	74.0	73.3	92	91	70-130	1	20	
Sodium, Dissolved	ug/L	9860	1000	1000	11300	11100	145	126	70-130	2	20 M1	
Thallium, Dissolved	ug/L	ND	80	80	90.7	90.2	113	113	70-130	.6	20	
Vanadium, Dissolved	ug/L	ND	80	80	82.4	80.4	103	100	70-130	2	20	
Zinc, Dissolved	ug/L	3040	80	80	2960	2950	-103	-113	70-130	.3	20 E,M1	

MATRIX SPIKE SAMPLE: 1043325

Parameter	Units	60104854001		Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers	
		Result	Conc.					RPD	RPD
Aluminum, Dissolved	ug/L			80	81.7	98	70-130		
Antimony, Dissolved	ug/L		ND	80	90.8	113	70-130		
Arsenic, Dissolved	ug/L			80	92.0	114	70-130		
Barium, Dissolved	ug/L			80	122	120	70-130		
Beryllium, Dissolved	ug/L			80	77.0	96	70-130		
Cadmium, Dissolved	ug/L			80	91.8	115	70-130		
Calcium, Dissolved	ug/L		1000		271000	1420	70-130	E,M1	
Chromium, Dissolved	ug/L			80	83.2	102	70-130		
Copper, Dissolved	ug/L			80	90.6	109	70-130		

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

MATRIX SPIKE SAMPLE:	1043325						
Parameter	Units	60104854001	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Iron, Dissolved	ug/L		1000	1000	100	70-130	
Lead, Dissolved	ug/L		80	82.2	102	70-130	
Magnesium, Dissolved	ug/L		1000	55200	637	70-130 M1	
Manganese, Dissolved	ug/L		80	117	102	70-130	
Nickel, Dissolved	ug/L		80	89.4	109	70-130	
Potassium, Dissolved	ug/L		1000	8300	137	70-130 M1	
Selenium, Dissolved	ug/L		80	97.5	111	70-130	
Silver, Dissolved	ug/L		80	73.5	92	70-130	
Sodium, Dissolved	ug/L		1000	224000	1680	70-130 E,M1	
Thallium, Dissolved	ug/L		80	93.4	117	70-130	
Vanadium, Dissolved	ug/L		80	86.6	105	70-130	
Zinc, Dissolved	ug/L		80	98.5	114	70-130	

QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

QC Batch:	MERC/5905	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury
Associated Lab Samples:	60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007, 60104863008, 60104863009, 60104863010, 60104863011		

METHOD BLANK: 1045089 Matrix: Water

Associated Lab Samples: 60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007,
60104863008, 60104863009, 60104863010, 60104863011

Parameter	Units	Blank	Reporting	Analyzed	Qualifiers
		Result	Limit		
Mercury	ug/L	ND	0.20	09/01/11 10:35	

LABORATORY CONTROL SAMPLE: 1045090

Parameter	Units	Spike	LCS	LCS	% Rec	Qualifiers
		Conc.	Result	% Rec	Limits	
Mercury	ug/L	5	5.0	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1045091 1045092

Parameter	Units	MS	MSD	MS	MSD	MS	MSD	% Rec	% Rec	Max	RPD	RPD	Qual
		60104863002	Spike										
Mercury	ug/L	ND	5	5	5.0	5.0	101	101	80-120	.2	20		

MATRIX SPIKE SAMPLE: 1045093

Parameter	Units	60104863011	Spike	MS	MS	% Rec	% Rec	Qualifiers
		Result	Conc.	Result	% Rec	Limits		
Mercury	ug/L	ND	5	3.8	75	80-120	M1	

QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

QC Batch:	MERC/5882	Analysis Method:	EPA 7470
QC Batch Method:	EPA 7470	Analysis Description:	7470 Mercury Dissolved
Associated Lab Samples:	60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007, 60104863008, 60104863009, 60104863010, 60104863011		

METHOD BLANK: 1041595 Matrix: Water

Associated Lab Samples: 60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007,
60104863008, 60104863009, 60104863010, 60104863011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury, Dissolved	ug/L	ND	0.20	08/31/11 16:25	

LABORATORY CONTROL SAMPLE: 1041596

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	5	5.1	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1041597 1041598

Parameter	Units	MS Result	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
Mercury, Dissolved	ug/L	ND	5	5	4.9	5.0	98	99	80-120	2	20

MATRIX SPIKE SAMPLE: 1041599

Parameter	Units	MS Result	MSD Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Mercury, Dissolved	ug/L	ND	5	5.5	109	80-120	

QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

QC Batch:	MT/6904	Analysis Method:	SM 2510B
QC Batch Method:	SM 2510B	Analysis Description:	2510B Specific Conductance

Associated Lab Samples: 60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007,
60104863008, 60104863009, 60104863010, 60104863011

METHOD BLANK: 1046091 Matrix: Water

Associated Lab Samples: 60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007,
60104863008, 60104863009, 60104863010, 60104863011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Specific Conductance	umhos/cm	ND	10.0	09/01/11 12:29	

LABORATORY CONTROL SAMPLE: 1046092

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1000	980	98	90-110	

SAMPLE DUPLICATE: 1046093

Parameter	Units	10167339005 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	864	851	2	20	

SAMPLE DUPLICATE: 1046094

Parameter	Units	60104863010 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1100	1080	2	20	

QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

QC Batch:	WET/30745	Analysis Method:	SM 2320B
QC Batch Method:	SM 2320B	Analysis Description:	2320B Alkalinity
Associated Lab Samples:	60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007, 60104863008, 60104863009, 60104863010, 60104863011		

METHOD BLANK: 868668 Matrix: Water

Associated Lab Samples: 60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007,
60104863008, 60104863009, 60104863010, 60104863011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	ND	20.0	08/31/11 17:10	

LABORATORY CONTROL SAMPLE: 868669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	500	482	96	90-110	

SAMPLE DUPLICATE: 868670

Parameter	Units	Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	125	121	3	9	

SAMPLE DUPLICATE: 868671

Parameter	Units	Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Total as CaCO ₃	mg/L	105	110	5	9	

QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

QC Batch:	WET/30634	Analysis Method:	SM 2540C
QC Batch Method:	SM 2540C	Analysis Description:	2540C Total Dissolved Solids
Associated Lab Samples:	60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007, 60104863008, 60104863009, 60104863010, 60104863011		

METHOD BLANK:	864924	Matrix:	Water
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Associated Lab Samples:	60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007, 60104863008, 60104863009, 60104863010, 60104863011
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Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	08/24/11 17:12	

SAMPLE DUPLICATE: 864925

Parameter	Units	60104863001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	864	963	11	17	

SAMPLE DUPLICATE: 864926

Parameter	Units	60104863011 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0		17	

QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

QC Batch:	WET/30633	Analysis Method:	SM 2540D
QC Batch Method:	SM 2540D	Analysis Description:	2540D Total Suspended Solids
Associated Lab Samples:	60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007, 60104863008, 60104863009, 60104863010, 60104863011		

METHOD BLANK: 864921 Matrix: Water

Associated Lab Samples: 60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007,
60104863008, 60104863009, 60104863010, 60104863011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	08/24/11 17:08	

SAMPLE DUPLICATE: 864922

Parameter	Units	60104874001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	20.0	27.0	30	25	R1

SAMPLE DUPLICATE: 864923

Parameter	Units	60104863009 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	20.0	16.0	22	25	

QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

QC Batch:	WETA/17439	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
Associated Lab Samples:	60104863001, 60104863003, 60104863004, 60104863005, 60104863006, 60104863008, 60104863009, 60104863010, 60104863011		

METHOD BLANK: 867689 Matrix: Water

Associated Lab Samples: 60104863001, 60104863003, 60104863004, 60104863005, 60104863006, 60104863008, 60104863009,
60104863010, 60104863011

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	08/30/11 15:35	

LABORATORY CONTROL SAMPLE: 867690

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE SAMPLE: 867693

Parameter	Units	60104863003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	488	250	768	112	61-119	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 867694 867695

Parameter	Units	MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.	MS Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	RPD	Qual
Sulfate	mg/L	862	500	500	1390	1440	105	115	61-119	4	10	

QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

QC Batch:	WETA/17459	Analysis Method:	EPA 300.0
QC Batch Method:	EPA 300.0	Analysis Description:	300.0 IC Anions
Associated Lab Samples:	60104863002, 60104863007		

METHOD BLANK: 868791 Matrix: Water

Associated Lab Samples: 60104863002, 60104863007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	ND	1.0	09/01/11 16:06	

LABORATORY CONTROL SAMPLE: 868792

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.1	103	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 868793 868794

Parameter	Units	MS 60104863002 Result	MSD Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Qual
Sulfate	mg/L	114	50	50	163	168	99	108	61-119	3	10	

MATRIX SPIKE SAMPLE: 868861

Parameter	Units	60104956001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	232	100	332	100	61-119	

QUALITY CONTROL DATA

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

QC Batch:	WETA/17436	Analysis Method:	SM 4500-CN-E
QC Batch Method:	SM 4500-CN-E	Analysis Description:	4500CNE Cyanide, Total
Associated Lab Samples: 60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007, 60104863008, 60104863009, 60104863010, 60104863011			

METHOD BLANK:	867554	Matrix:	Water
Associated Lab Samples: 60104863001, 60104863002, 60104863003, 60104863004, 60104863005, 60104863006, 60104863007, 60104863008, 60104863009, 60104863010, 60104863011			

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cyanide	mg/L	ND	0.0050	08/30/11 19:37	

LABORATORY CONTROL SAMPLE:	867555	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	.1	0.11	108	69-126	

MATRIX SPIKE SAMPLE:	867556	60104863001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cyanide	mg/L	ND	.1	0.093	93	41-136	

SAMPLE DUPLICATE:	867557	60104863003 Result	Dup Result	Max RPD	Qualifiers
Cyanide	mg/L	ND	ND	26	

QUALIFIERS

Project: RIZO WATER SAMPLING AUG. 2011
Pace Project No.: 60104863

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

LABORATORIES

PASI-K Pace Analytical Services - Kansas City

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

E Analyte concentration exceeded the calibration range. The reported result is estimated.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

R1 RPD value was outside control limits.

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60104863001	DR-6	EPA 6020	ICPM/28051	EPA 6020	ICPM/11385
60104863002	DR-7	EPA 6020	ICPM/28051	EPA 6020	ICPM/11385
60104863003	DR-8	EPA 6020	ICPM/28051	EPA 6020	ICPM/11385
60104863004	DR-4-SW	EPA 6020	ICPM/28051	EPA 6020	ICPM/11385
60104863005	DR-G	EPA 6020	ICPM/28051	EPA 6020	ICPM/11385
60104863006	DR-1	EPA 6020	ICPM/28051	EPA 6020	ICPM/11385
60104863007	DR-2	EPA 6020	ICPM/28051	EPA 6020	ICPM/11385
60104863008	DR-3	EPA 6020	ICPM/28051	EPA 6020	ICPM/11385
60104863009	DR-4	EPA 6020	ICPM/28051	EPA 6020	ICPM/11385
60104863010	DR-5	EPA 6020	ICPM/28051	EPA 6020	ICPM/11385
60104863011	FB	EPA 6020	ICPM/28051	EPA 6020	ICPM/11385
60104863001	DR-6	EPA 6020	ICPM/28049	EPA 6020	ICPM/11383
60104863002	DR-7	EPA 6020	ICPM/28049	EPA 6020	ICPM/11383
60104863003	DR-8	EPA 6020	ICPM/28049	EPA 6020	ICPM/11383
60104863004	DR-4-SW	EPA 6020	ICPM/28049	EPA 6020	ICPM/11383
60104863005	DR-G	EPA 6020	ICPM/28049	EPA 6020	ICPM/11383
60104863006	DR-1	EPA 6020	ICPM/28049	EPA 6020	ICPM/11383
60104863007	DR-2	EPA 6020	ICPM/28049	EPA 6020	ICPM/11383
60104863008	DR-3	EPA 6020	ICPM/28049	EPA 6020	ICPM/11383
60104863009	DR-4	EPA 6020	ICPM/28049	EPA 6020	ICPM/11383
60104863010	DR-5	EPA 6020	ICPM/28049	EPA 6020	ICPM/11383
60104863011	FB	EPA 6020	ICPM/28049	EPA 6020	ICPM/11383
60104863001	DR-6	EPA 7470	MERC/5905	EPA 7470	MERC/6710
60104863002	DR-7	EPA 7470	MERC/5905	EPA 7470	MERC/6710
60104863003	DR-8	EPA 7470	MERC/5905	EPA 7470	MERC/6710
60104863004	DR-4-SW	EPA 7470	MERC/5905	EPA 7470	MERC/6710
60104863005	DR-G	EPA 7470	MERC/5905	EPA 7470	MERC/6710
60104863006	DR-1	EPA 7470	MERC/5905	EPA 7470	MERC/6710
60104863007	DR-2	EPA 7470	MERC/5905	EPA 7470	MERC/6710
60104863008	DR-3	EPA 7470	MERC/5905	EPA 7470	MERC/6710
60104863009	DR-4	EPA 7470	MERC/5905	EPA 7470	MERC/6710
60104863010	DR-5	EPA 7470	MERC/5905	EPA 7470	MERC/6710
60104863011	FB	EPA 7470	MERC/5905	EPA 7470	MERC/6710
60104863001	DR-6	EPA 7470	MERC/5882	EPA 7470	MERC/6691
60104863002	DR-7	EPA 7470	MERC/5882	EPA 7470	MERC/6691
60104863003	DR-8	EPA 7470	MERC/5882	EPA 7470	MERC/6691
60104863004	DR-4-SW	EPA 7470	MERC/5882	EPA 7470	MERC/6691
60104863005	DR-G	EPA 7470	MERC/5882	EPA 7470	MERC/6691
60104863006	DR-1	EPA 7470	MERC/5882	EPA 7470	MERC/6691
60104863007	DR-2	EPA 7470	MERC/5882	EPA 7470	MERC/6691
60104863008	DR-3	EPA 7470	MERC/5882	EPA 7470	MERC/6691
60104863009	DR-4	EPA 7470	MERC/5882	EPA 7470	MERC/6691
60104863010	DR-5	EPA 7470	MERC/5882	EPA 7470	MERC/6691
60104863011	FB	EPA 7470	MERC/5882	EPA 7470	MERC/6691
60104863001	DR-6	SM 2510B	MT/6904		
60104863002	DR-7	SM 2510B	MT/6904		
60104863003	DR-8	SM 2510B	MT/6904		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60104863004	DR-4-SW	SM 2510B	MT/6904		
60104863005	DR-G	SM 2510B	MT/6904		
60104863006	DR-1	SM 2510B	MT/6904		
60104863007	DR-2	SM 2510B	MT/6904		
60104863008	DR-3	SM 2510B	MT/6904		
60104863009	DR-4	SM 2510B	MT/6904		
60104863010	DR-5	SM 2510B	MT/6904		
60104863011	FB	SM 2510B	MT/6904		
60104863001	DR-6	Calculated	MT/6915		
60104863002	DR-7	Calculated	MT/6915		
60104863003	DR-8	Calculated	MT/6915		
60104863004	DR-4-SW	Calculated	MT/6915		
60104863005	DR-G	Calculated	MT/6915		
60104863006	DR-1	Calculated	MT/6915		
60104863007	DR-2	Calculated	MT/6915		
60104863008	DR-3	Calculated	MT/6915		
60104863009	DR-4	Calculated	MT/6915		
60104863010	DR-5	Calculated	MT/6915		
60104863011	FB	Calculated	MT/6915		
60104863001	DR-6	SM 2320B	WET/30745		
60104863002	DR-7	SM 2320B	WET/30745		
60104863003	DR-8	SM 2320B	WET/30745		
60104863004	DR-4-SW	SM 2320B	WET/30745		
60104863005	DR-G	SM 2320B	WET/30745		
60104863006	DR-1	SM 2320B	WET/30745		
60104863007	DR-2	SM 2320B	WET/30745		
60104863008	DR-3	SM 2320B	WET/30745		
60104863009	DR-4	SM 2320B	WET/30745		
60104863010	DR-5	SM 2320B	WET/30745		
60104863011	FB	SM 2320B	WET/30745		
60104863001	DR-6	SM 2540C	WET/30634		
60104863002	DR-7	SM 2540C	WET/30634		
60104863003	DR-8	SM 2540C	WET/30634		
60104863004	DR-4-SW	SM 2540C	WET/30634		
60104863005	DR-G	SM 2540C	WET/30634		
60104863006	DR-1	SM 2540C	WET/30634		
60104863007	DR-2	SM 2540C	WET/30634		
60104863008	DR-3	SM 2540C	WET/30634		
60104863009	DR-4	SM 2540C	WET/30634		
60104863010	DR-5	SM 2540C	WET/30634		
60104863011	FB	SM 2540C	WET/30634		
60104863001	DR-6	SM 2540D	WET/30633		
60104863002	DR-7	SM 2540D	WET/30633		
60104863003	DR-8	SM 2540D	WET/30633		
60104863004	DR-4-SW	SM 2540D	WET/30633		
60104863005	DR-G	SM 2540D	WET/30633		
60104863006	DR-1	SM 2540D	WET/30633		

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

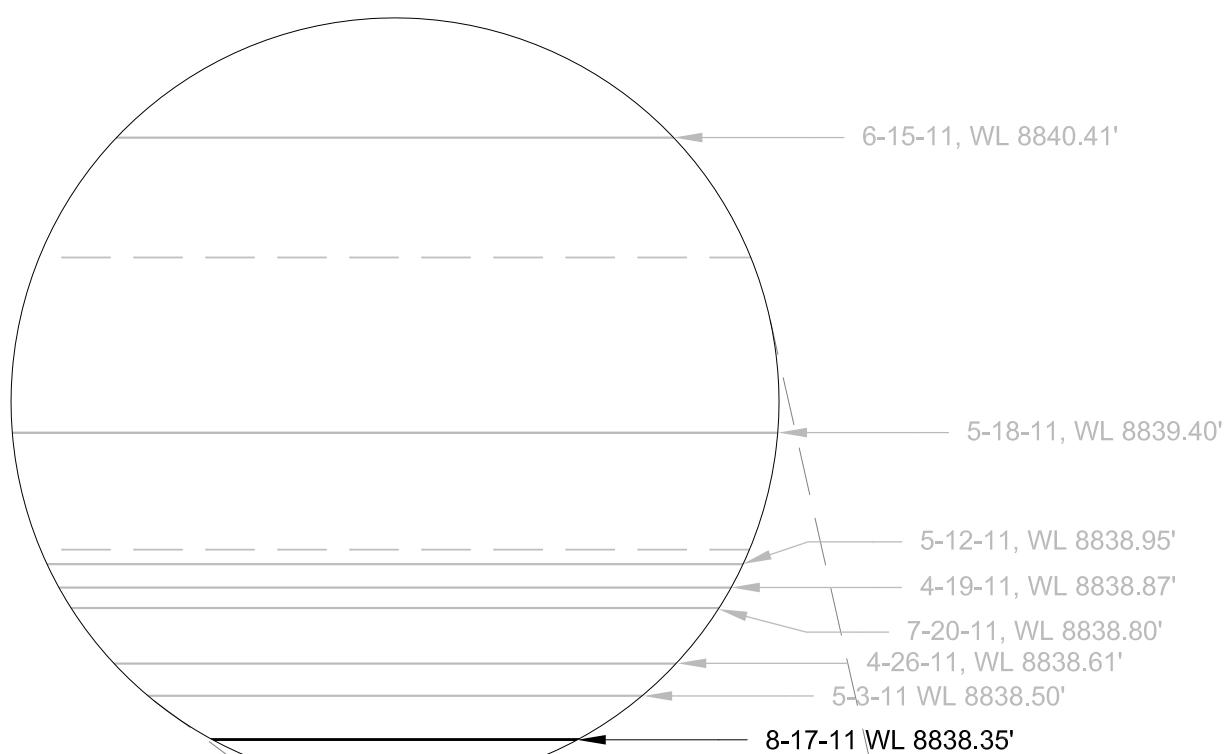
Project: RIZO WATER SAMPLING AUG. 2011

Pace Project No.: 60104863

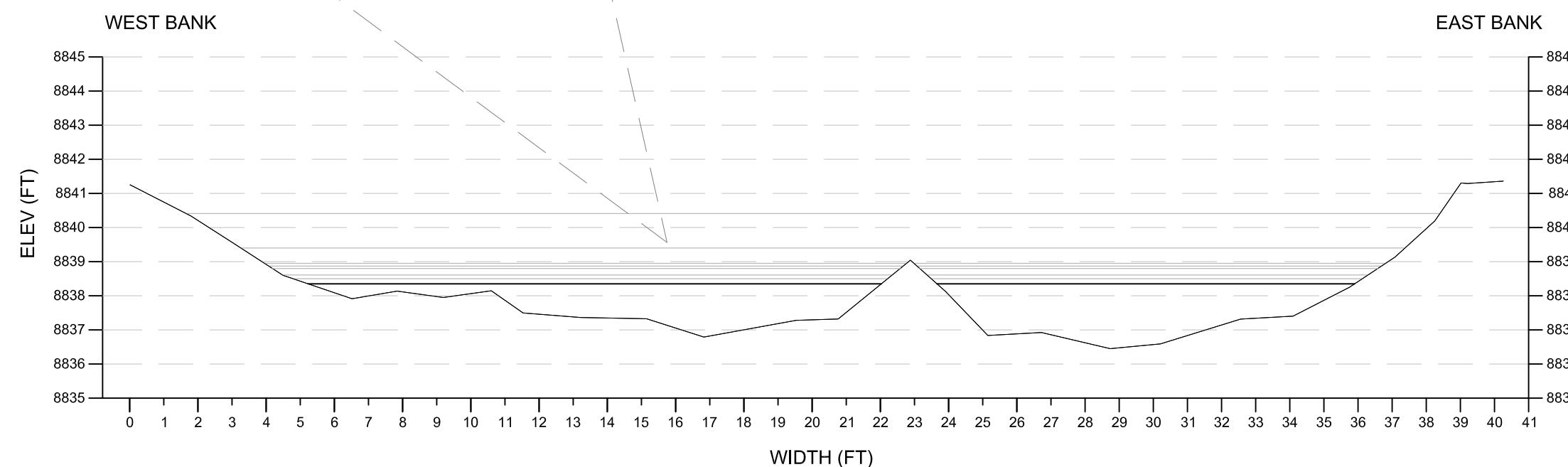
Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60104863007	DR-2	SM 2540D	WET/30633		
60104863008	DR-3	SM 2540D	WET/30633		
60104863009	DR-4	SM 2540D	WET/30633		
60104863010	DR-5	SM 2540D	WET/30633		
60104863011	FB	SM 2540D	WET/30633		
60104863001	DR-6	EPA 300.0		WETA/17439	
60104863002	DR-7	EPA 300.0		WETA/17459	
60104863003	DR-8	EPA 300.0		WETA/17439	
60104863004	DR-4-SW	EPA 300.0		WETA/17439	
60104863005	DR-G	EPA 300.0		WETA/17439	
60104863006	DR-1	EPA 300.0		WETA/17439	
60104863007	DR-2	EPA 300.0		WETA/17459	
60104863008	DR-3	EPA 300.0		WETA/17439	
60104863009	DR-4	EPA 300.0		WETA/17439	
60104863010	DR-5	EPA 300.0		WETA/17439	
60104863011	FB	EPA 300.0		WETA/17439	
60104863001	DR-6	SM 4500-CN-E		WETA/17436	
60104863002	DR-7	SM 4500-CN-E		WETA/17436	
60104863003	DR-8	SM 4500-CN-E		WETA/17436	
60104863004	DR-4-SW	SM 4500-CN-E		WETA/17436	
60104863005	DR-G	SM 4500-CN-E		WETA/17436	
60104863006	DR-1	SM 4500-CN-E		WETA/17436	
60104863007	DR-2	SM 4500-CN-E		WETA/17436	
60104863008	DR-3	SM 4500-CN-E		WETA/17436	
60104863009	DR-4	SM 4500-CN-E		WETA/17436	
60104863010	DR-5	SM 4500-CN-E		WETA/17436	
60104863011	FB	SM 4500-CN-E		WETA/17436	

Appendix E

Flow Cross Sections



DR-1 CROSS SECTION



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General Notes		
Scale in Feet		
0	2	4
No.	Revision/Issue	Date

ATLANTIC RICHFIELD
COMPANY



ANDERSON
ENGINEERING COMPANY, INC.

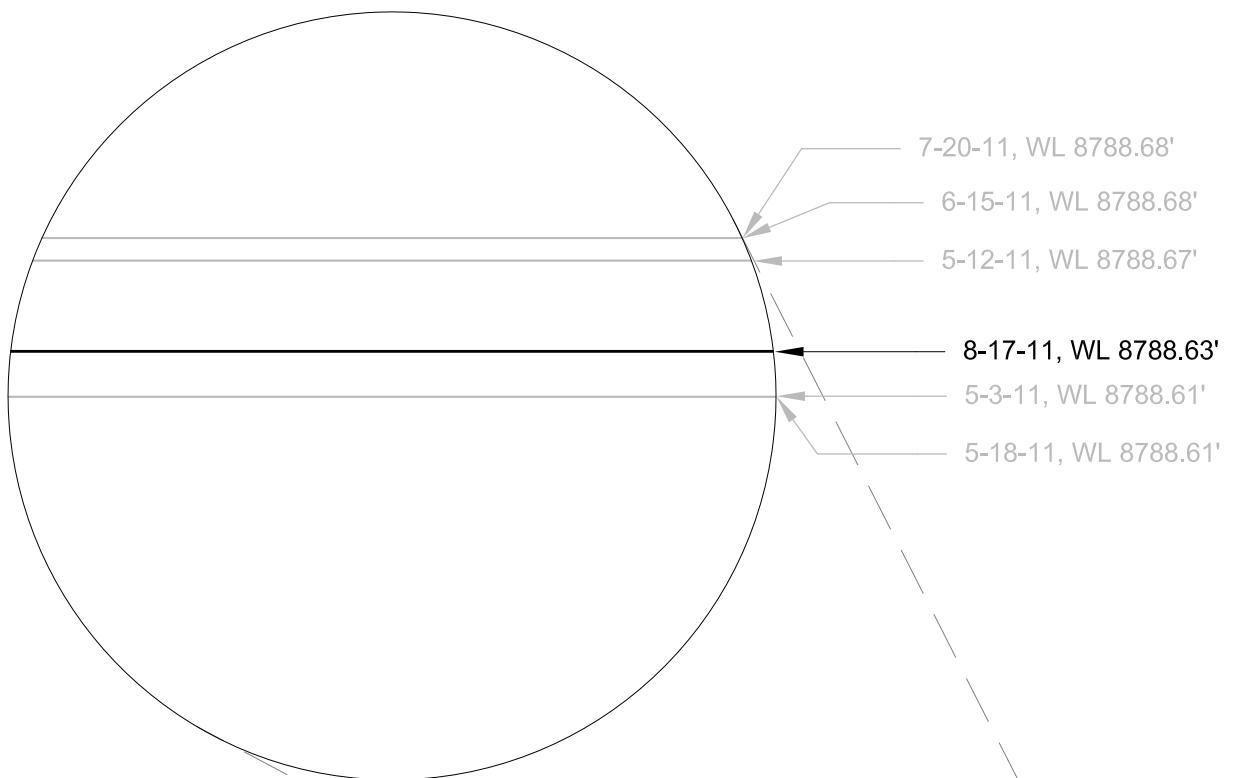
DRAWN BY: MAD
ENGINEER: CS, MAD
APPROVED:

**RICO SURFACE
WATER SAMPLING**
**DOLORES RIVER CROSS
SECTION AT SAMPLING
STATION DR-1**

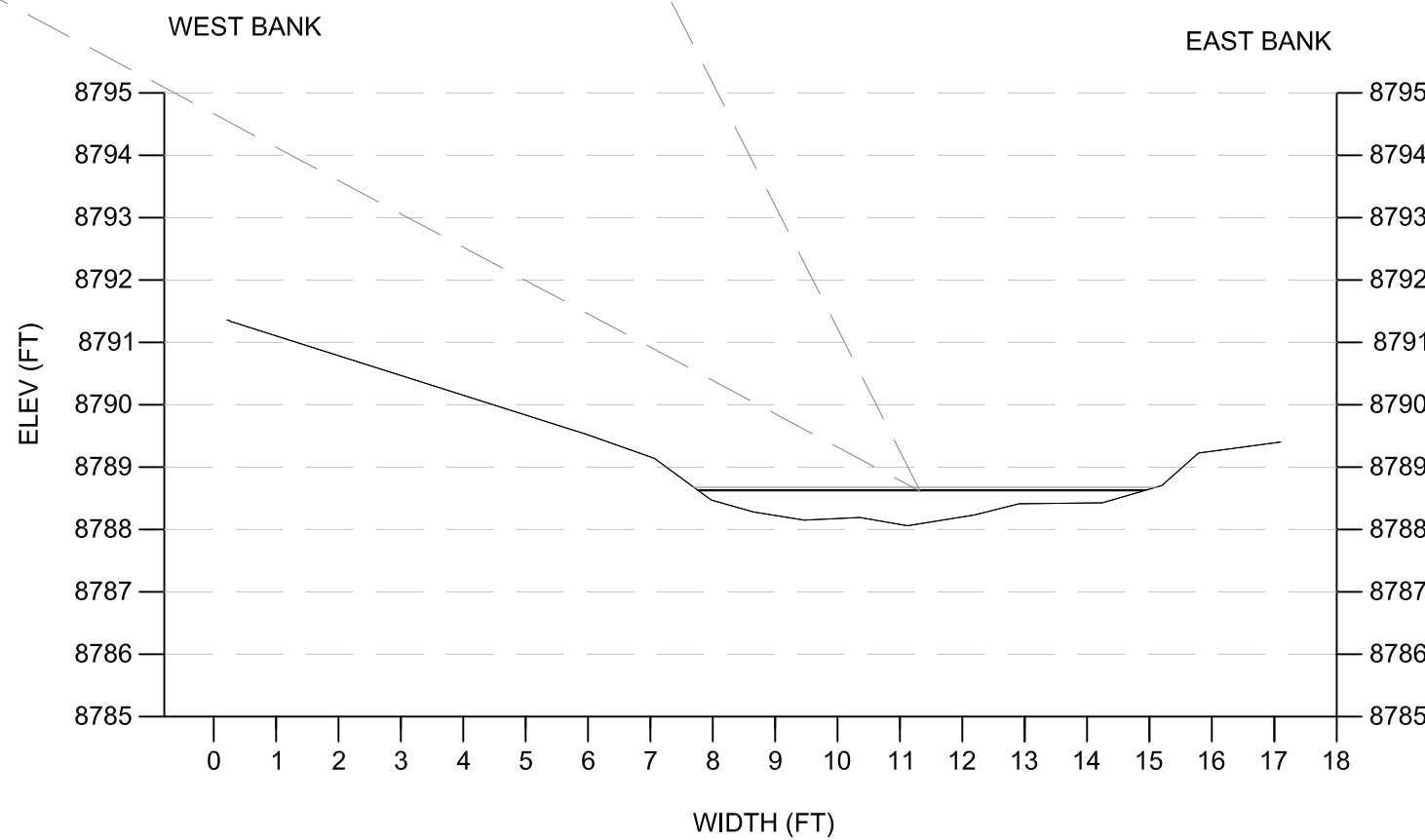
RICO, CO

Project	Figure
Date	17-AUG-2011
Scale	

3



DR-5 CROSS SECTION



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General Notes		
<i>[Large empty area for notes]</i>		
<i>Scale in Feet</i> 		
No.	Revision/Issue	Date

ATLANTIC RICHFIELD
COMPANY



ANDERSON
ENGINEERING COMPANY, INC.

DRAWN BY: MAD
ENGINEER: CS, MAD
APPROVED:

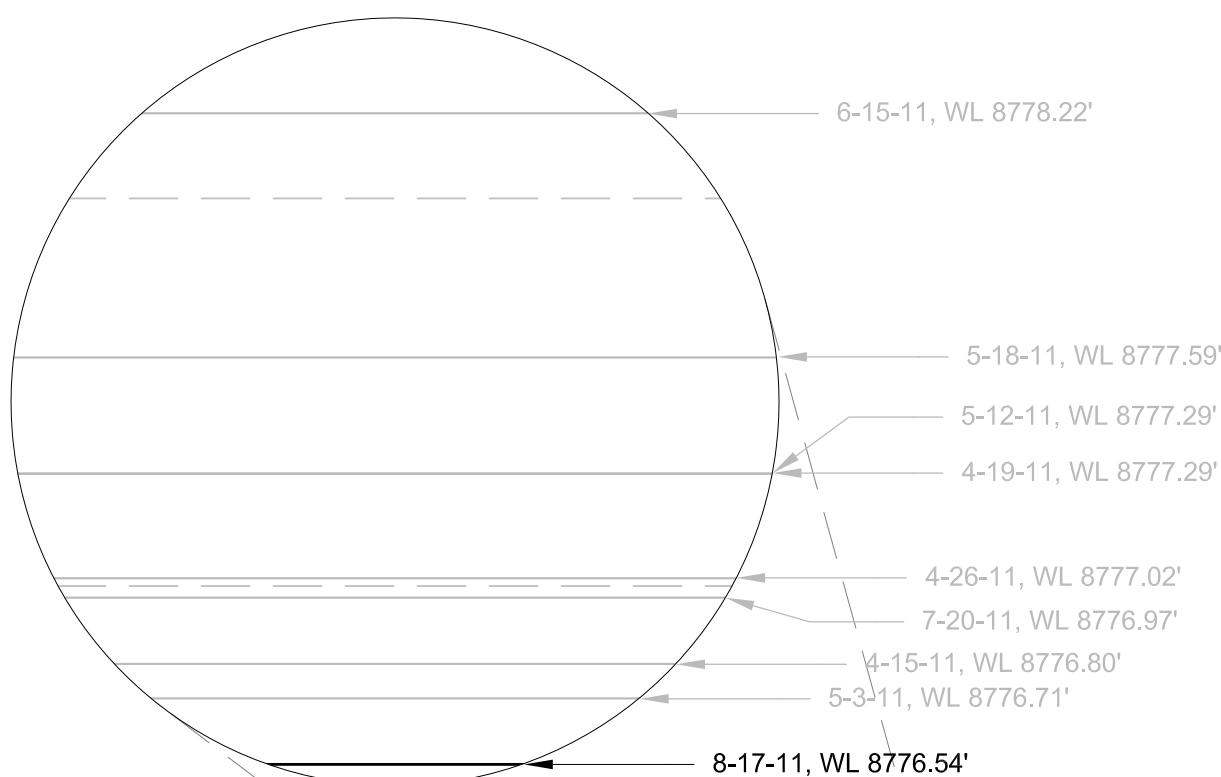
**RICO SURFACE
WATER SAMPLING**

**POND 8 EMBANKMENT
CROSS SECTION AT
SAMPLING STATION DR-5**

RICO, CO

Project	Figure
Date	17-AUG-2011
Scale	

4



General Notes

Scale in Feet
0 3 6

No.	Revision/Issue	Date

ATLANTIC RICHFIELD COMPANY



ANDERSON
ENGINEERING COMPANY, INC.

DRAWN BY: MAD
ENGINEER: CS, MAD
APPROVED:

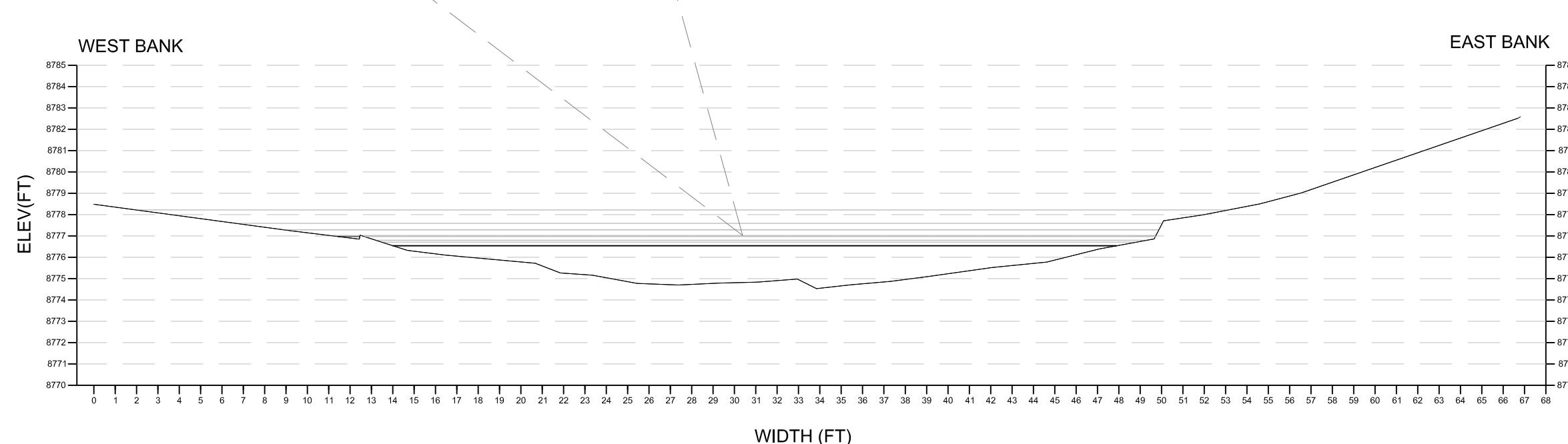
RICO SURFACE
WATER SAMPLING

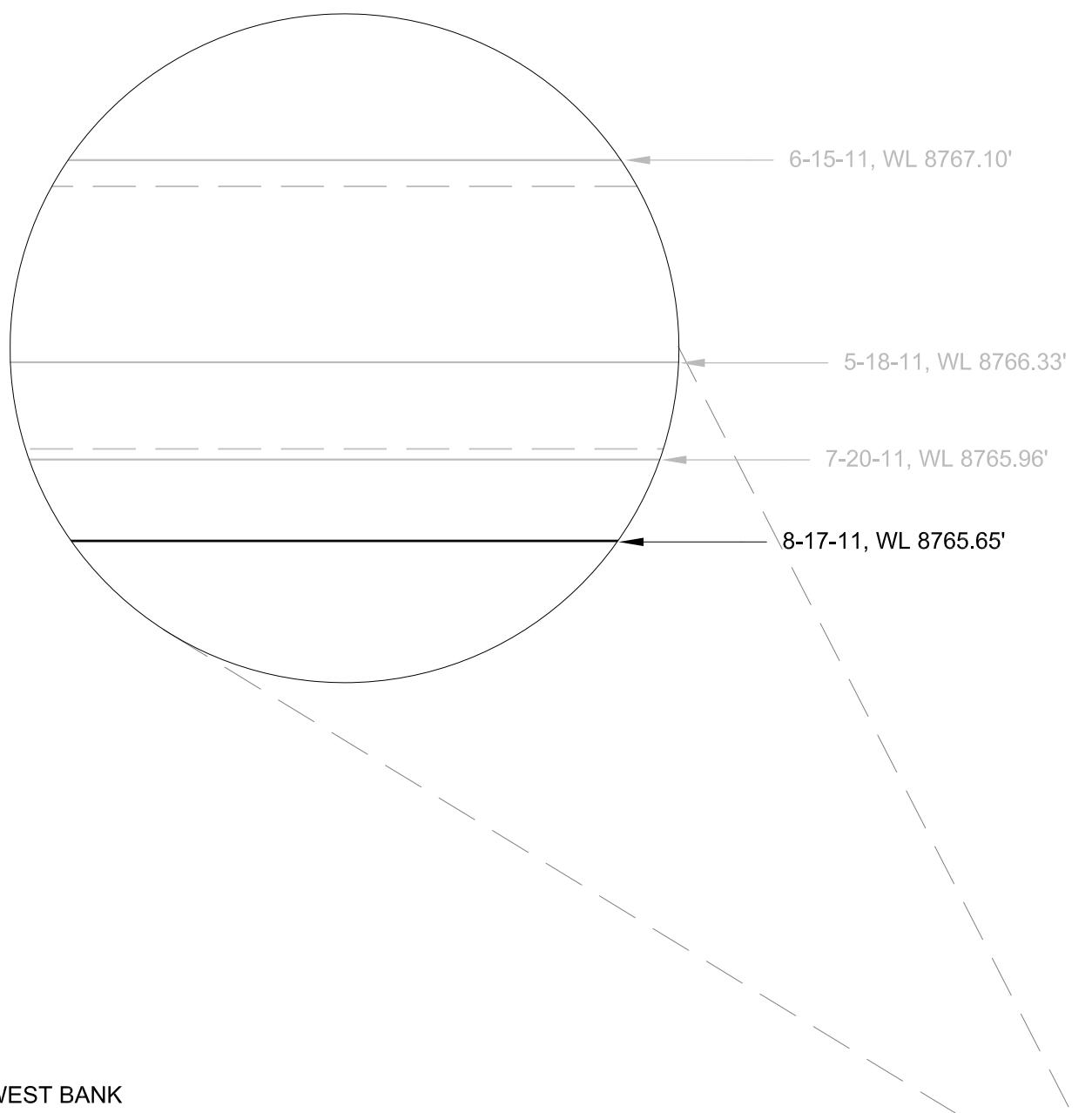
DOLORES RIVER CROSS
SECTION AT SAMPLING
STATION DR-2

RICO, CO

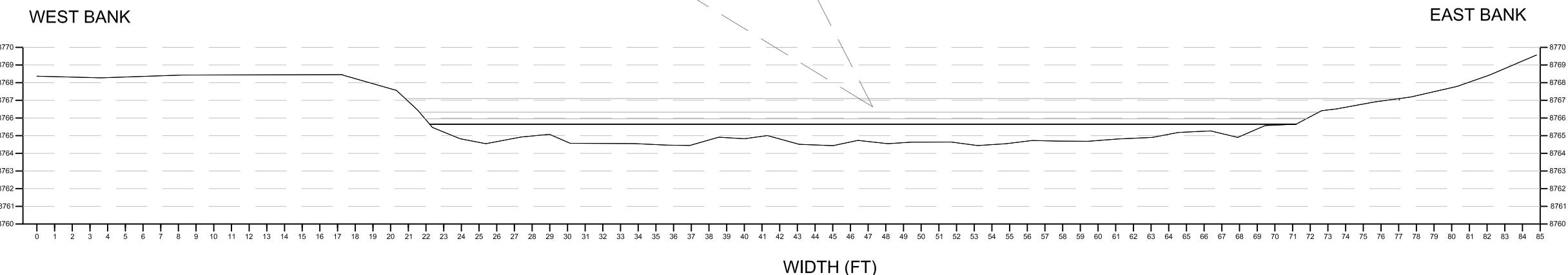
Project	Figure
Date 17-AUG-2011	
Scale	

5





DR-7 CROSS SECTION



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General Notes		
Scale in Feet 0 3.5 7		
No.	Revision/Issue	Date

ATLANTIC RICHFIELD COMPANY



ANDERSON
ENGINEERING COMPANY, INC.

DRAWN BY: MAD
ENGINEER: CS, MAD
APPROVED:

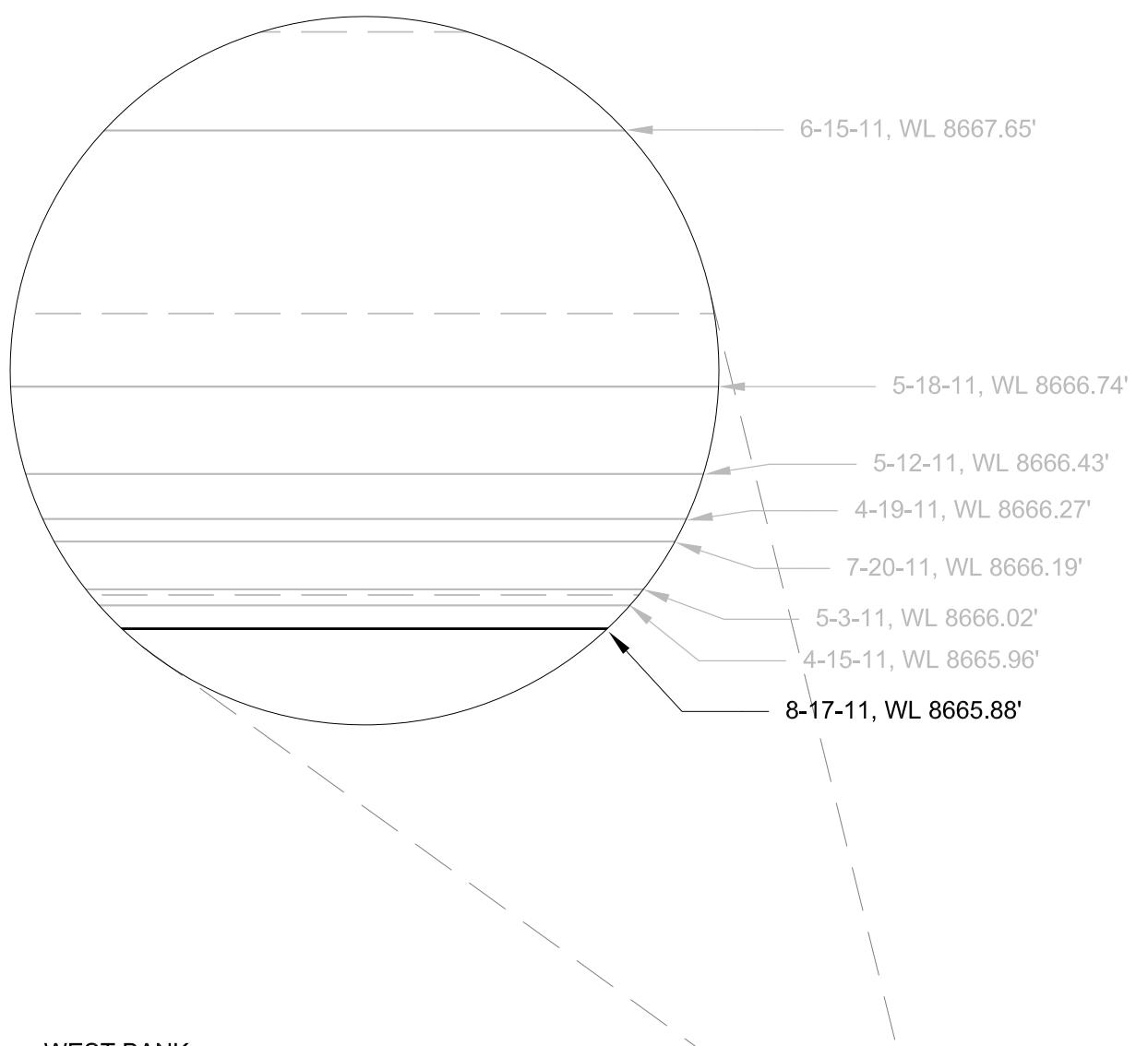
**RICO SURFACE
WATER SAMPLING**

**DOLORES RIVER CROSS
SECTION AT SAMPLING
STATION DR-7**

RICO, CO

Project	Figure
Date	17-AUG-2011
Scale	

6



6-15-11, WL 8667.65'

5-18-11, WL 8666.74'

5-12-11, WL 8666.43'

4-19-11, WL 8666.27'

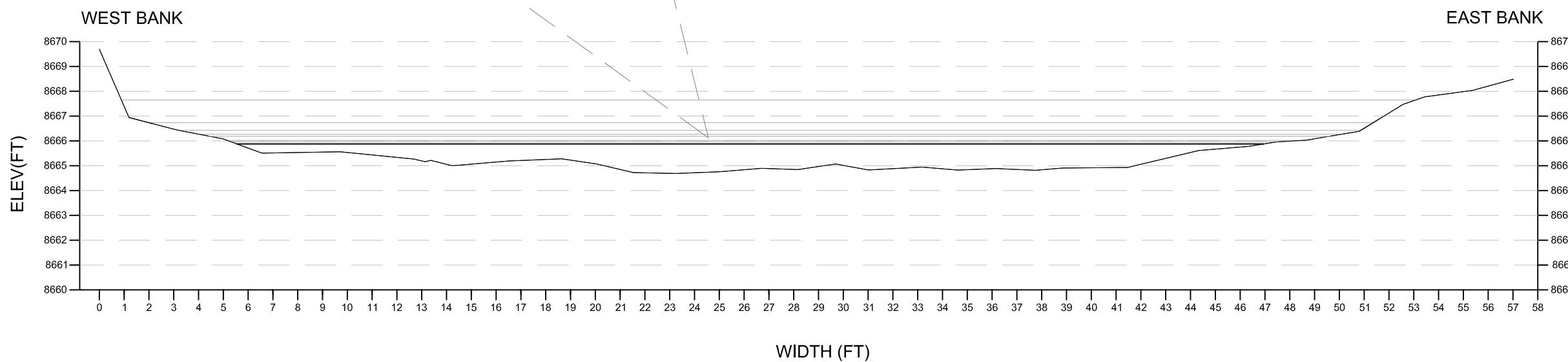
7-20-11, WL 8666.19'

5-3-11, WL 8666.02'

4-15-11, WL 8665.96'

8-17-11, WL 8665.88'

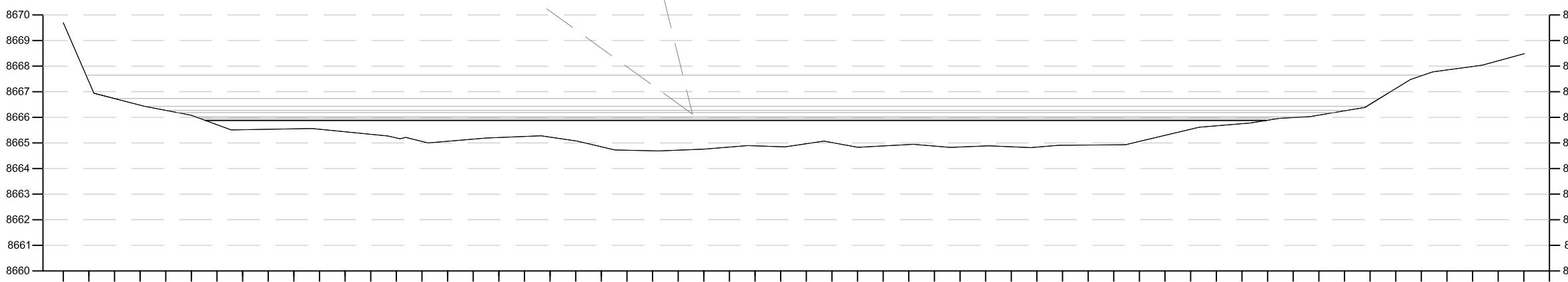
DR-4-SW CROSS SECTION



WEST BANK

EAST BANK

ELEV(FT)



WIDTH (FT)

General Notes

Scale in Feet
0 2.5 5

No. Revision/Issue Date

ATLANTIC RICHFIELD COMPANY



ANDERSON
ENGINEERING COMPANY, INC.

DRAWN BY: MAD

ENGINEER: CS, MAD

APPROVED:

RICO SURFACE
WATER SAMPLING

DOLORES RIVER CROSS
SECTION AT SAMPLING
STATION DR-4-SW

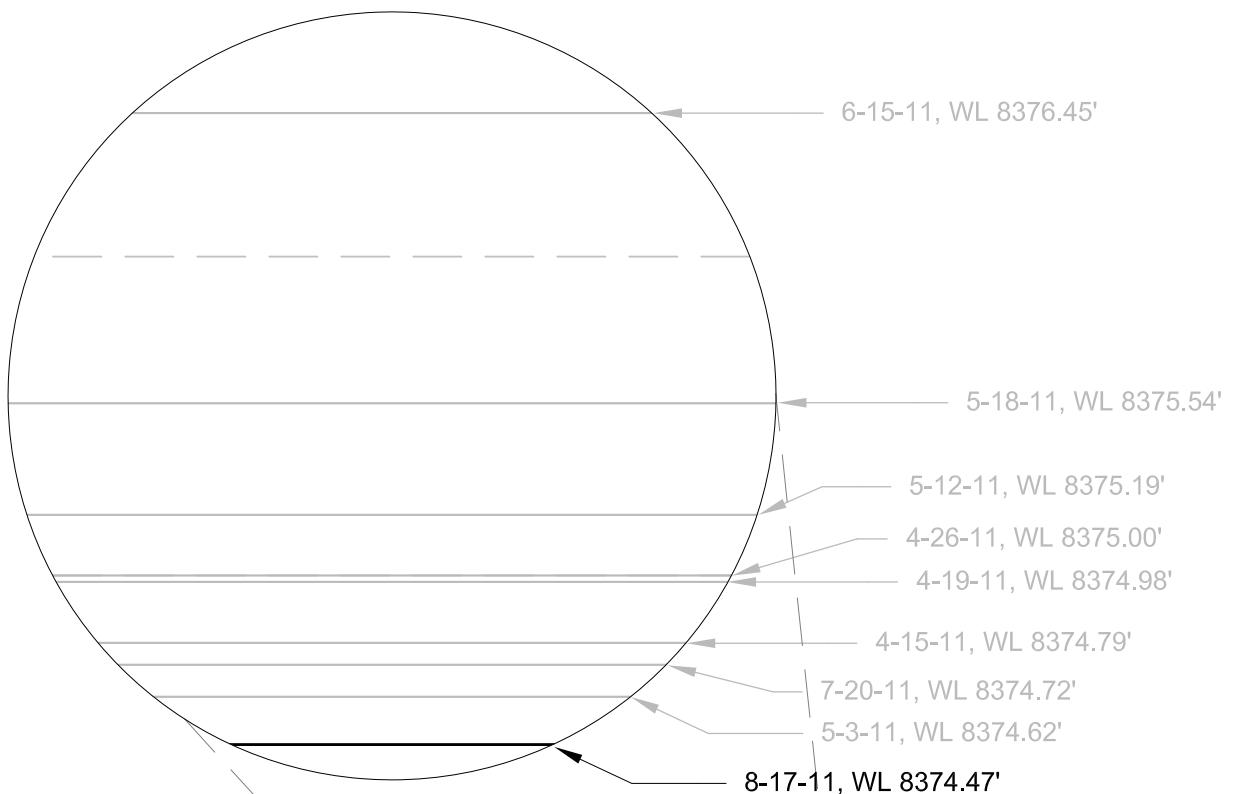
RICO, CO

Project Figure

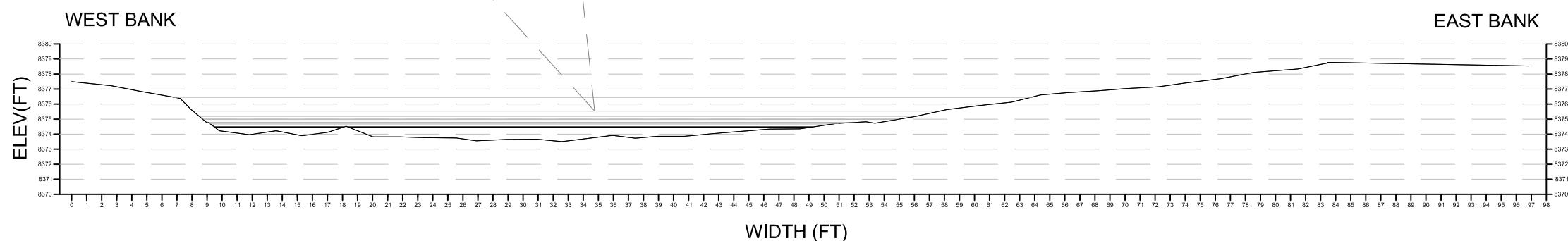
Date 20-JUL-2011

Scale

7



DR-G CROSS SECTION



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General Notes		
Scale in Feet		
0 4.5 9		
No.	Revision/Issue	Date

ATLANTIC RICHFIELD
COMPANY



ANDERSON
ENGINEERING COMPANY, INC.

DRAWN BY: MAD
ENGINEER: CS, MAD
APPROVED:

**RICO SURFACE
WATER SAMPLING**

**DOLORES RIVER CROSS
SECTION AT SAMPLING
STATION DR-G**

RICO, CO

Project	Figure
Date	20-JUL-2011
Scale	

8

Appendix F
Chain of Custody Records



A BP affiliated company

185251

Page ____ of ____

Chain of Custody Record

Project Name: Rico Water Sampling Aug. 2011
 BP BU/AR Region/Envos Segment:

State or Lead Regulatory Agency:

Requested Due Date (mm/dd/yy): _____

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Lab Name: <u>Pace Analytical</u> Address: <u>9608 Lorret Blvd</u> <u>Lomexa KS 66219</u> Lab PM: <u>Colleen Revere</u> Tele/Fax: <u>(913) 999-5665</u> BP/AR EBM: Address: Tele/Fax:				BP/AR Facility No.: BP/AR Facility Address: Site Lat/Long: California Global ID No.: Envos Project No.: Provision or OOC (circle one) Phase/WBS: Sub Phase/Task: Cost Element:				Consultant/Contractor: Address: Consultant/Contractor Project No.: Consultant/Contractor PM: Tele/Fax: Report Type & QC Level: E-mail EDD To: Invoice to: Consultant or BP or Atlantic Richfield Co. (circle one)															
Lab Bottle Order No:				Matrix				Preservative				Requested Analysis				Sample Point Lat/Long and Comments <u>60104863</u>							
Item No.	Sample Description	Time	Date	Soil/Solid	Water/Liquid	Air	Laboratory No.	No. of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	NaOH	Total Metals/ Hardness			Dissolved Metals	Alk / DS / TDS	Sulfate	Cyanide	Salinity	
1	DR-6	1BP3U	1BP2U	1BP3C	X		2BP3N 1.5	5	X	X			X	X	X	X	X	X	X				001
2	DR-7				X			5	X	X			X	X	X	X	X	X	X	X			002
3	DR-8				X			5	X	X			X	X	X	X	X	X	X	X			003
4	DR-4-SW				X			5	Y	X			X	X	X	X	X	X	X	X			004
5	DR-6	↓	↓	↓	X			5	Y	X			X	X	X	X	X	X	X	X			005
6																							
7																							
8																							
9																							
10																							

Sampler's Name: Mark DeFries
 Sampler's Company: Anderson Engineering Co. Inc.
 Shipment Date:

Shipment Method:

Shipment Tracking No:

Special Instructions:

Relinquished By / Affiliation	Date	Time	Accepted By / Affiliation	Date	Time
			<u>Phuengang</u>	<u>8/23/11</u>	<u>1030</u>

1941
Custody Seals In Place: Yes / No

Temp Blank: Yes / No

Cooler Temp on Receipt: 2.1 °F/C

Trip Blank: Yes / No

MS/MSD Sample Submitted: Yes / No

Laboratory Copy

Atlantic Richfield Company



A BP affiliated company

185252

Chain of Custody Record

Project Name: Rice Water Sampling, Aug 2011
 BP BU/AR Region/Envos Segment:

State or Lead Regulatory Agency:

Requested Due Date (mm/dd/yy):

Page _____ of _____

On-site Time:	Temp:
Off-site Time:	Temp:
Sky Conditions:	
Meteorological Events:	
Wind Speed:	Direction:

Lab Name: <u>Pace Analytical</u>	BP/AR Facility No.:	Consultant/Contractor:						
Address: <u>9608 Laird Blvd Lenexa KS 66219</u>	BP/AR Facility Address:	Address:						
Lab PM: <u>Colleen Keparc</u>	Site Lat/Long:	Consultant/Contractor Project No.:						
Tele/Fax: <u>(913) 599-5663</u>	California Global ID No.:	Consultant/Contractor PM:						
BP/AR EBM:	Envos Project No.:	Tele/Fax:						
Address:	Provision or OOC (circle one)	Report Type & QC Level:						
Tele/Fax:	Phase/WBS:	E-mail EDD To:						
Lab Bottle Order No:	Sub Phase/Task:	Invoice to: Consultant or BP or Atlantic Richfield Co. (circle one)						
Item No.	Sample Description	Matrix	Laboratory No.	No. of Containers	Preservative	Requested Analysis	Sample Point Lat/Long and Comments	
1	DR-1				Unpreserved	T _{tot} / Total T _{sol} / Solids T _{SS} / TSS T _{TP} / TP T _{Cl} / Chloride Salinity		
2	DR-2		X		H ₂ SO ₄	X	X X X X X	BP2n BP3n BP3n 1.5 BP3o
3	DR-3		X		HNO ₃	X	X X X X X	BP2n BP3n BP3n 1.5 BP3o
4	DR-4		X		HCl	X	X X X X X	BP2n BP3n BP3n 1.5 BP3o
5	DR-5		X		Methanol	X	X X X X X	BP2n BP3n BP3n 1.5 BP3o
6	DR-6 FB		X		NaOH	X	X X X X X	BP2n BP3n BP3n 1.5 BP3o
7								BP2n BP3n BP3n 1.5 BP3o
8								BP2n BP3n BP3n 1.5 BP3o
9								BP2n BP3n BP3n 1.5 BP3o
10								BP2n BP3n BP3n 1.5 BP3o

Sampler's Name: Mark DeFreeze
 Sampler's Company: Anderson Engineering Co., Inc.
 Shipment Date:
 Shipment Method:
 Shipment Tracking No:
 Special Instructions:

Relinquished By / Affiliation

Date

Time

Accepted By / Affiliation

Date

Time

8/27/11 10:30

Custody Seals In Place: Yes /

Temp Blank: Yes / No

Cooler Temp on Receipt: 2-2 °F /

Trip Blank: Yes /

MS/MSD Sample Submitted: Yes /

Sample Condition Upon Receipt – ESI Tech Specs

Client Name: BP Anderson

Project #: 600104863

Courier: Fed Ex UPS USPS Client Commercial Pace Other

Optional

Proj Due Date: 9/21/11

Proj Name:

Tracking #: 875627671951 Pace Shipping Label Used? Yes No

Custody Seal on Cooler/Box Present: Yes No Seals intact: Yes No

Packing Material: Bubble Wrap Bubble Bags Foam None Other 2P1C

Thermometer Used: T-191 / T-194 Type of Ice: Wet Blue None Samples received on ice, cooling process has begun.

Cooler Temperature: 2.1 2.2

(circle one)

Date and initials of person examining
contents: PV8123/11

Temperature should be above freezing to 6°C

Chain of Custody present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody filled out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler name & signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples arrived within holding time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.
Short Hold Time analyses (<7hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.
Rush Turn Around Time requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.
Sufficient volume:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.
Correct containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>DR 6</u>
-Pace containers used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>DR 7</u> <u>DR 8</u>
Containers intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>DR 4-SW</u>
Unpreserved 5035A soils frozen w/in 48hrs?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11. <u>DR 6</u>
Filtered volume received for dissolved tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	12. <u>DR 1</u>
Sample labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>DR 2</u> <u>DR 3</u>
-Includes date/time/ID/analyses Matrix:		13. <u>DR 4</u>
All containers needing preservation have been checked.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<u>DR 5</u>
All containers needing preservation are found to be in compliance with EPA recommendation.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	14. <u>FB</u>
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Initial when completed Lot # of added preservative
Trip Blank present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Pace Trip Blank lot # (if purchased):		15.
Headspace in VOA vials (>6mm):	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	16.
Project sampled in USDA Regulated Area:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	17. List State: <u>N</u>

Client Notification/ Resolution:

Copy COC to Client? Y N

Field Data Required? Y / N

Person Contacted:

Date/Time:

Temp Log: Record start and finish times when unpacking cooler, if >20 min, recheck sample temps.

Comments/ Resolution: Emailed Mark for collection dates & times.
CBK 8/23/11
Per Mark samples were collected on 8/17/11 between 8am-4pm.

Project Manager Review: CBK

Date: 8/24/11

Start: 1435 Start: 1559

End: 1446 End: 1607

Temp: Cooler 1 Temp: Cooler 2

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the NC DENR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers).

Appendix G

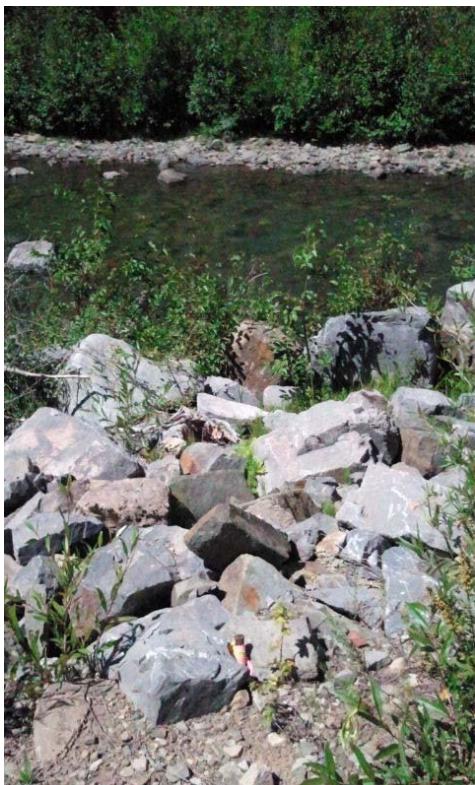
Field Photos



Cross Section at Station DR-1



Cross Section at Station DR-5



Cross Section at Station DR-2



Cross Section at Station DR-7



Cross Section at Station DR-4-SW



Cross Section at Station DR-G

Appendix H
Field Log Book Records

8-17-11

Arrived on site, TSEA Review
and Daily toolbox at 7:45am

DR-G

BM Elev 5.21

WL Elev 9.28

East → West

Velocities 0.31 1.35 0.99 1.21
0.40 0.61 2.03 2.44 1.94 1.56
2.35 2.10 2.80 1.81 2.00 2.86
1.65 0.83 1.77 1.18 1.02

Field parameters

pH 8.69 DC 1.35 RPM
EC 334 μS T 13.6°C

photo #1

Field kit calibrated at 8:25am

Sample collected 8:45am

8-17-11

DR-4-SW

BM 5.18

WL 7.79

East → West

Velocities 1.01 0.73 2.52 2.25
1.48 1.02 1.00 1.28 2.40 1.48
1.66 3.06 1.41 1.80 3.50 1.22 1.47
0.61 0.14

Field tests

pH 7.94 DO 1.32 ppm

EC 336 μS T 11.7°C

photo #2

Sample collected 9:30am

8-17-11

DR-3A

BM 5.10

WL 10.02

Velocities 0.34 0.74 0.81
1.83 1.72 1.95 2.36 1.65
2.16 2.27 1.48 1.05 1.42
1.90 0.80 1.31 0.07

photo #3

8-17-11

DR-2A

BM 4.55

WL 10.75 (lower)

WL 10.23 (higher)

Velocities 0.40 1.08 1.76 }

0.24 1.60 1.47 0.53 1.42 2.81

2.21 3.09 1.65 3.33 2.59 2.87

2.49 1.31 2.09 0.89 0.39

photo #4

8-17-11

DR-7

BM 6.92

WL 10.84

Velocities 0.30 0.54 0.66 1.37
2.50 2.66 2.15 2.50 1.47 1.85 1.67
1.36 1.83 1.57 1.50 1.02 1.55 1.31
0.70 0.45 0.75 0.15

Field measurements

pH 7.58 DO 1.0 ppm
EC 428 μS T 15.2°C

photo #5

Sample collected at 11:15 am

8-17-11

DR-6

flow by parshall flume
Depth measured by orpheus
mini

Field Measurements

pH 7.54 DO 0.85 ppm
EC 1118 μS T 18.4°C

Sample collected 11:40 am

8-17-11

TR-2

BM 5.28
WL 11.33

east → west

Velocities 0.46 0.58 1.05 0.52
0.61 1.37 1.51 1.23 0.95 1.21 0.45
1.2 0.89 1.19 0.79 0.53

Field tests

pH 7.54 DO 8.85 ppm
EC 1118 μS T 18.4°C

Sample collected at 12:26 pm

Field tests

pH 7.88 DO 1.01 ppm
EC 256 μS T 15.8°C

8-17-11

TR-5

BM 5.05
WL 7.78

West → East

Velocities 0.16 0.20 0.16 0.11

1st leak 2' x 0.4' at 0.46 ft/s

2nd leak 1' x 0.25' at 4.13 ft/s

Field test's

pH 8.09 DO 8.0 ppm
EC 1056 μS T 19.8

photo # 7

Sample collected at 12:15 pm

8-12-11

DR-4 Adit 1S discharge
Two pipe discharge

Pipe 1 (upper) velocities:

6.37 6.64 6.71 6.65

Pipe 2 (lower) velocities:

2.91 2.62 2.49 2.66 2.68

Pipe 1 depth: 0.35'

Pipe 2 depth: 0.20'

Field tests

pH 7.01 DO 7.3 ppm
EC 1071 μ s T 22.6°C

Sample collected at 2:10pm

8-17-11

DR-3 Adit discharge
velocity / flow by parshall
flume.

Depth by ultrasonic sensor

ND Field Measurements

pH 7.39 DO 0.82 ppm
EC 1039 μ s T 19.6°C

Sample collected at

8-17-11

DR-8 Duplicate of DR-3

pH 7.39
EC 1034 μ s DO 8.2 ppm
T 19.6°C

collected at:

8-17-11

FB (Field Blank)

pH 7.75
EC 0.0 μ s DO .57 ppm
T 29.7

collected at 2:25 pm

8-17-11

DR-1

BM S. 35
WL S. 36

East → west

Velocities 0.49 2.63 3.25 2.64
3.34 2.66 1.52 2.85 2.11 2.88 ~~2.29~~
1.06 0.16 0.77

Field tests

pH 8.06 DO 8.8 ppm
EC 232 μS T 19.2°C

photo # 8

Sample collected at 3:15pm

8-17-11

DR-1A

BM S. 59
EL S. 04

Velocities 1.21 0.82 1.06 1.44 3.25
2.69 1.82 2.04 1.47 1.84 1.15
1.52 1.76 2.45 0.78 1.40 2.11
0.73 0.20
photo # 9

8-17-11

GW-0 : 12.51'
GW-1 : 1.9'
GW-3 : 12.67'
GW-4 : 10.81'
GW-5 : 20.48'
GW-6 : 22.13'
GW-7 : 21.07'

EB-1 : 21.18'
EB-2 : 16.14'

Appendix I

North Flume Ultrasonic Meter Data with Flowrates

Date, Time	Reading	Parameter	Depth to water (ft)	Depth from sensor to Bottom of Flume (ft)	Depth of Flow (ft)	Depth of Flow (in)	Flowrate (cfs)	Flowrate (gpm)
8/1/2011 0:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 0:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 0:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 0:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 1:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 1:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 1:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 1:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 2:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 2:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 2:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 2:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 3:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 3:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 3:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 3:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 4:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 4:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 4:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 4:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 5:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 5:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 5:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 5:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 6:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 6:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 6:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 6:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 7:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 7:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 7:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 7:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 8:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 8:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 8:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 8:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 9:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 9:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 9:30	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7
8/1/2011 9:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 10:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/1/2011 10:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 10:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 10:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/1/2011 11:00	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7

Date/Time	Parameter	Value	Unit	Value	Unit	Value	Unit
8/21/2011 13:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 13:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 13:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 13:45	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 14:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 14:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 14:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 14:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 15:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 15:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 15:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 15:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 16:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 16:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 16:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 16:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 17:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 17:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 17:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 17:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 18:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 18:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 18:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 18:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 19:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 19:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 19:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 19:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 20:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/21/2011 20:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 20:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 20:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/21/2011 21:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 21:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 21:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 21:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/21/2011 22:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 22:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 22:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 22:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/21/2011 23:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 23:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 23:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/21/2011 23:45	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/22/2011 0:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/22/2011 0:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/22/2011 0:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7

8/22/2011 0:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/22/2011 1:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 1:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 1:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 1:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 2:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 2:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 2:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 2:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 3:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 3:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 3:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 3:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 4:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 4:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 4:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 4:45	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7
8/22/2011 5:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 5:15	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7
8/22/2011 5:30	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7
8/22/2011 5:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 6:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 6:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 6:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 6:45	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7
8/22/2011 7:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 7:15	8.6	Level	1.4	2.073	0.673	8.075	1.69	756.7
8/22/2011 7:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 7:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 8:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 8:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 8:30	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 8:45	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 9:00	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 9:15	8.65	Level	1.35	2.073	0.723	8.675	1.88	843.3
8/22/2011 9:30	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7
8/22/2011 9:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/22/2011 10:00	8.64	Level	1.36	2.073	0.713	8.555	1.84	825.7
8/22/2011 10:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/22/2011 10:30	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/22/2011 10:45	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/22/2011 11:00	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/22/2011 11:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7
8/22/2011 11:30	8.68	Level	1.32	2.073	0.753	9.035	2.00	896.7
8/22/2011 11:45	8.68	Level	1.32	2.073	0.753	9.035	2.00	896.7
8/22/2011 12:00	8.68	Level	1.32	2.073	0.753	9.035	2.00	896.7
8/22/2011 12:15	8.69	Level	1.31	2.073	0.763	9.155	2.04	914.7

Date/Time	Parameter	Value	Unit	Value	Unit	Value	Unit
8/23/2011 0:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/23/2011 0:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/23/2011 0:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/23/2011 1:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/23/2011 1:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 1:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 1:45	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 2:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 2:15	8.6 Level	1.4	2.073	0.673	8.075	1.69	756.7
8/23/2011 2:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/23/2011 2:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/23/2011 3:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/23/2011 3:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/23/2011 3:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 3:45	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 4:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 4:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 4:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 4:45	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 5:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 5:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 5:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 5:45	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 6:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 6:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 6:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 6:45	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 7:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 7:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 7:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 7:45	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 8:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 8:15	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 8:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 8:45	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 9:00	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 9:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/23/2011 9:30	8.64 Level	1.36	2.073	0.713	8.555	1.84	825.7
8/23/2011 9:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/23/2011 10:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/23/2011 10:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/23/2011 10:30	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/23/2011 10:45	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/23/2011 11:00	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/23/2011 11:15	8.69 Level	1.31	2.073	0.763	9.155	2.04	914.7
8/23/2011 11:30	8.68 Level	1.32	2.073	0.753	9.035	2.00	896.7
8/23/2011 11:45	8.68 Level	1.32	2.073	0.753	9.035	2.00	896.7

8/31/2011 19:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 20:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 20:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 20:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 20:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 21:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 21:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 21:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 21:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 22:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 22:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 22:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 22:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 23:00	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 23:15	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 23:30	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3
8/31/2011 23:45	8.65 Level	1.35	2.073	0.723	8.675	1.88	843.3

Appendix H

South Flume Orpheus Mini Data with Flowrates

Date	Time	Depth from top of flume to water (ft)	Depth of Flume Total (ft)	Depth of Flow (ft)	Flowrate (cfs)	Flowrate (gpm)
8/1/2011	12:00:00 AM		1.79	2.5	0.71	1.83
8/1/2011	1:00:00 AM		1.79	2.5	0.71	1.83
8/1/2011	2:00:00 AM		1.79	2.5	0.71	1.83
8/1/2011	3:00:00 AM		1.79	2.5	0.71	1.83
8/1/2011	4:00:00 AM		1.78	2.5	0.72	1.87
8/1/2011	5:00:00 AM		1.78	2.5	0.72	1.87
8/1/2011	6:00:00 AM		1.78	2.5	0.72	1.87
8/1/2011	7:00:00 AM		1.79	2.5	0.71	1.83
8/1/2011	8:00:00 AM		1.79	2.5	0.71	1.83
8/1/2011	9:00:00 AM		1.79	2.5	0.71	1.83
8/1/2011	10:00:00 AM		1.79	2.5	0.71	1.83
8/1/2011	11:00:00 AM		1.8	2.5	0.70	1.79
8/1/2011	12:00:00 PM		1.8	2.5	0.70	1.79
8/1/2011	1:00:00 PM		1.79	2.5	0.71	1.83
8/1/2011	2:00:00 PM		1.78	2.5	0.72	1.87
8/1/2011	3:00:00 PM		1.76	2.5	0.74	1.95
8/1/2011	4:00:00 PM		1.76	2.5	0.74	1.95
8/1/2011	5:00:00 PM		1.76	2.5	0.74	1.95
8/1/2011	6:00:00 PM		1.74	2.5	0.76	2.03
8/1/2011	7:00:00 PM		1.68	2.5	0.82	2.27
8/1/2011	8:00:00 PM		1.67	2.5	0.83	2.31
8/1/2011	9:00:00 PM		1.67	2.5	0.83	2.31
8/1/2011	10:00:00 PM		1.68	2.5	0.82	2.27
8/1/2011	11:00:00 PM		1.69	2.5	0.81	2.23
8/2/2011	12:00:00 AM		1.71	2.5	0.79	2.15
8/2/2011	1:00:00 AM		1.72	2.5	0.78	2.11
8/2/2011	2:00:00 AM		1.73	2.5	0.77	2.07
8/2/2011	3:00:00 AM		1.74	2.5	0.76	2.03
8/2/2011	4:00:00 AM		1.75	2.5	0.75	1.99
8/2/2011	5:00:00 AM		1.75	2.5	0.75	1.99
8/2/2011	6:00:00 AM		1.76	2.5	0.74	1.95
8/2/2011	7:00:00 AM		1.77	2.5	0.73	1.91
8/2/2011	8:00:00 AM		1.77	2.5	0.73	1.91
8/2/2011	9:00:00 AM		1.78	2.5	0.72	1.87
8/2/2011	10:00:00 AM		1.78	2.5	0.72	1.87
8/2/2011	11:00:00 AM		1.78	2.5	0.72	1.87
8/2/2011	12:00:00 PM		1.78	2.5	0.72	1.87
8/2/2011	1:00:00 PM		1.8	2.5	0.70	1.79
8/2/2011	2:00:00 PM		1.79	2.5	0.71	1.83
8/2/2011	3:00:00 PM		1.8	2.5	0.70	1.79
8/2/2011	4:00:00 PM		1.8	2.5	0.70	1.79
8/2/2011	5:00:00 PM		1.8	2.5	0.70	1.79
8/2/2011	6:00:00 PM		1.8	2.5	0.70	1.79
8/2/2011	7:00:00 PM		1.8	2.5	0.70	1.79
8/2/2011	8:00:00 PM		1.8	2.5	0.70	1.79

8/2/2011	9:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/2/2011	10:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/2/2011	11:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/3/2011	12:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/3/2011	1:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/3/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/3/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/3/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/3/2011	5:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/3/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/3/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/3/2011	8:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/3/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/3/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/3/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/3/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/3/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/3/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/3/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/3/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/3/2011	5:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/3/2011	6:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/3/2011	7:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/3/2011	8:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/3/2011	9:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/3/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/3/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/4/2011	12:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	1:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/4/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/4/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/4/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/4/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/4/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/4/2011	5:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/4/2011	6:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/4/2011	7:00:00 PM	1.8	2.5	0.70	1.79	803.2

8/4/2011	8:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/4/2011	9:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/4/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/4/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/5/2011	12:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/5/2011	1:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/5/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/5/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/5/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/5/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/5/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/5/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/5/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/5/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/5/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/5/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/5/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/5/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/5/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/5/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/5/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/5/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/5/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/5/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/5/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/5/2011	9:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/5/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/5/2011	11:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/6/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/6/2011	1:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/6/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/6/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/6/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/6/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/6/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/6/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/6/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/6/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/6/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/6/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/6/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/6/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/6/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/6/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/6/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/6/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/6/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9

8/6/2011	7:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/6/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/6/2011	9:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/6/2011	10:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/6/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/7/2011	12:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/7/2011	1:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/7/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/7/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/7/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/7/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/7/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/7/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/7/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/7/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/7/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/7/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/7/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/7/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/7/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/7/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/7/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/7/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/7/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/7/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/7/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/7/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/7/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/7/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/8/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/8/2011	1:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/8/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/8/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/8/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/8/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/8/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/8/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/8/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/8/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/8/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/8/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/8/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/8/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/8/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/8/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/8/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/8/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9

8/8/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/8/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/8/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/8/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/8/2011	10:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/8/2011	11:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/9/2011	12:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/9/2011	1:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/9/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/9/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/9/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/9/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/9/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/9/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/9/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/9/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/9/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/9/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/9/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/9/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/9/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/9/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/9/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/9/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/9/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/9/2011	7:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/9/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/9/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/9/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/9/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/10/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/10/2011	1:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/10/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/10/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/10/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/10/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/10/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/10/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/10/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/10/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/10/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/10/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/10/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/10/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/10/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/10/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/10/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9

8/10/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/10/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/10/2011	7:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/10/2011	8:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/10/2011	9:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/10/2011	10:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/10/2011	11:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/11/2011	12:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	1:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/11/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/11/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/11/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/11/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/11/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/11/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/11/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/11/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/11/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/11/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/11/2011	10:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/11/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/12/2011	12:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	1:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/12/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/12/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/12/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/12/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2

8/12/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/12/2011	5:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/12/2011	6:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/12/2011	7:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/12/2011	8:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/12/2011	9:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/12/2011	10:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/12/2011	11:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	12:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	1:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/13/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	5:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	6:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	7:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	8:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	9:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	10:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/13/2011	11:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/14/2011	12:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/14/2011	1:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/14/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/14/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/14/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/14/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/14/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/14/2011	7:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/14/2011	8:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/14/2011	9:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/14/2011	10:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/14/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/14/2011	12:00:00 PM	1.79	2.5	0.71	1.83	820.6
8/14/2011	1:00:00 PM	1.79	2.5	0.71	1.83	820.6
8/14/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2

8/14/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/14/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/14/2011	5:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/14/2011	6:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/14/2011	7:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/14/2011	8:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/14/2011	9:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/14/2011	10:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/14/2011	11:00:00 PM	1.79	2.5	0.71	1.83	820.6
8/15/2011	12:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	1:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	2:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	3:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	4:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	5:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	6:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	7:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	8:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	9:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	10:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	11:00:00 AM	1.79	2.5	0.71	1.83	820.6
8/15/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/15/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/15/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/15/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/15/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/15/2011	5:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/15/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/15/2011	7:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/15/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/15/2011	9:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/15/2011	10:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/15/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/16/2011	12:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/16/2011	1:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/16/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/16/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/16/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/16/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/16/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/16/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/16/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/16/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/16/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/16/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/16/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/16/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2

8/16/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/16/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/16/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/16/2011	5:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/16/2011	6:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/16/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/16/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/16/2011	9:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/16/2011	10:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/16/2011	11:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/17/2011	12:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	1:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	2:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	5:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/17/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/17/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/17/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/17/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/17/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/17/2011	5:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/17/2011	6:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/17/2011	7:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/17/2011	8:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/17/2011	9:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/17/2011	10:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/17/2011	11:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/18/2011	12:00:00 AM	1.82	2.5	0.68	1.71	768.8
8/18/2011	1:00:00 AM	1.82	2.5	0.68	1.71	768.8
8/18/2011	2:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/18/2011	3:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/18/2011	4:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/18/2011	5:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/18/2011	6:00:00 AM	1.82	2.5	0.68	1.71	768.8
8/18/2011	7:00:00 AM	1.82	2.5	0.68	1.71	768.8
8/18/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/18/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/18/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/18/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/18/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9

8/18/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/18/2011	2:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/18/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/18/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/18/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/18/2011	6:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/18/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/18/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/18/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/18/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/18/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/19/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/19/2011	1:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/19/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/19/2011	3:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/19/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/19/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/19/2011	6:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/19/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/19/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/19/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/19/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/19/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/19/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/19/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/19/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/19/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/19/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/19/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/19/2011	6:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/19/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/19/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/19/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/19/2011	10:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/19/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/20/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/20/2011	1:00:00 AM	1.82	2.5	0.68	1.71	768.8
8/20/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/20/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/20/2011	4:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/20/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/20/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/20/2011	7:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/20/2011	8:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/20/2011	9:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/20/2011	10:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/20/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9

8/22/2011	11:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/22/2011	12:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/22/2011	1:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/22/2011	2:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/22/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/22/2011	4:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/22/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/22/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/22/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/22/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/22/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/22/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/22/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/23/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/23/2011	1:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/23/2011	2:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/23/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/23/2011	4:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/23/2011	5:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/23/2011	6:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/23/2011	7:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/23/2011	8:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/23/2011	9:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/23/2011	10:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/23/2011	11:00:00 AM	1.8	2.5	0.70	1.79	803.2
8/23/2011	12:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/23/2011	1:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/23/2011	2:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/23/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/23/2011	4:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/23/2011	5:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/23/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/23/2011	7:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/23/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/23/2011	9:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/23/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/23/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/24/2011	12:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/24/2011	1:00:00 AM	1.89	2.5	0.61	1.45	652.4
8/24/2011	2:00:00 AM	2.07	2.5	0.43	0.86	384.7
8/24/2011	3:00:00 AM	2.15	2.5	0.35	0.63	281.9
8/24/2011	4:00:00 AM	2.24	2.5	0.26	0.40	179.9
8/24/2011	5:00:00 AM	2.13	2.5	0.37	0.68	306.6
8/24/2011	6:00:00 AM	1.95	2.5	0.55	1.24	558.0
8/24/2011	7:00:00 AM	1.93	2.5	0.57	1.31	588.9
8/24/2011	8:00:00 AM	1.91	2.5	0.59	1.38	620.4
8/24/2011	9:00:00 AM	1.9	2.5	0.60	1.42	636.4

8/24/2011	10:00:00 AM	1.92	2.5	0.58	1.35	604.6
8/24/2011	11:00:00 AM	1.34	2.5	1.16	3.84	1722.7
8/24/2011	12:00:00 PM	1.54	2.5	0.96	2.88	1294.4
8/24/2011	1:00:00 PM	1.71	2.5	0.79	2.15	964.2
8/24/2011	2:00:00 PM	1.77	2.5	0.73	1.91	855.8
8/24/2011	3:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/24/2011	4:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/24/2011	5:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/24/2011	6:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/24/2011	7:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/24/2011	8:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/24/2011	9:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/24/2011	10:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/24/2011	11:00:00 PM	1.86	2.5	0.64	1.56	701.5
8/25/2011	12:00:00 AM	1.87	2.5	0.63	1.53	685.0
8/25/2011	1:00:00 AM	1.86	2.5	0.64	1.56	701.5
8/25/2011	2:00:00 AM	1.87	2.5	0.63	1.53	685.0
8/25/2011	3:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/25/2011	4:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/25/2011	5:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/25/2011	6:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/25/2011	7:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/25/2011	8:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/25/2011	9:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/25/2011	10:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/25/2011	11:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/25/2011	12:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/25/2011	1:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/25/2011	2:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/25/2011	3:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/25/2011	4:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/25/2011	5:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/25/2011	6:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/25/2011	7:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/25/2011	8:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/25/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/25/2011	10:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/25/2011	11:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/26/2011	12:00:00 AM	1.88	2.5	0.62	1.49	668.7
8/26/2011	1:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/26/2011	2:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/26/2011	3:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/26/2011	4:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/26/2011	5:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/26/2011	6:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/26/2011	7:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/26/2011	8:00:00 AM	1.84	2.5	0.66	1.64	734.9

8/26/2011	9:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/26/2011	10:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/26/2011	11:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/26/2011	12:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/26/2011	1:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/26/2011	2:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/26/2011	3:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/26/2011	4:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/26/2011	5:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/26/2011	6:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/26/2011	7:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/26/2011	8:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/26/2011	9:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/26/2011	10:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/26/2011	11:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/27/2011	12:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	1:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	2:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	3:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	4:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	5:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	6:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	7:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	8:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	9:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	10:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	11:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/27/2011	12:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/27/2011	1:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/27/2011	2:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/27/2011	3:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/27/2011	4:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/27/2011	5:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/27/2011	6:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/27/2011	7:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/27/2011	8:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/27/2011	9:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/27/2011	10:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/27/2011	11:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/28/2011	12:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/28/2011	1:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/28/2011	2:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/28/2011	3:00:00 AM	1.81	2.5	0.69	1.75	785.9
8/28/2011	4:00:00 AM	1.78	2.5	0.72	1.87	838.1
8/28/2011	5:00:00 AM	1.72	2.5	0.78	2.11	945.9
8/28/2011	6:00:00 AM	1.66	2.5	0.84	2.36	1057.9
8/28/2011	7:00:00 AM	1.62	2.5	0.88	2.53	1134.9

8/28/2011	8:00:00 AM	1.58	2.5	0.92	2.70	1213.8
8/28/2011	9:00:00 AM	1.55	2.5	0.95	2.84	1274.0
8/28/2011	10:00:00 AM	1.54	2.5	0.96	2.88	1294.4
8/28/2011	11:00:00 AM	1.55	2.5	0.95	2.84	1274.0
8/28/2011	12:00:00 PM	1.54	2.5	0.96	2.88	1294.4
8/28/2011	1:00:00 PM	1.54	2.5	0.96	2.88	1294.4
8/28/2011	2:00:00 PM	1.53	2.5	0.97	2.93	1314.8
8/28/2011	3:00:00 PM	1.53	2.5	0.97	2.93	1314.8
8/28/2011	4:00:00 PM	1.52	2.5	0.98	2.98	1335.3
8/28/2011	5:00:00 PM	1.52	2.5	0.98	2.98	1335.3
8/28/2011	6:00:00 PM	1.44	2.5	1.06	3.35	1503.4
8/28/2011	7:00:00 PM	1.66	2.5	0.84	2.36	1057.9
8/28/2011	8:00:00 PM	1.75	2.5	0.75	1.99	891.5
8/28/2011	9:00:00 PM	1.79	2.5	0.71	1.83	820.6
8/28/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/28/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/29/2011	12:00:00 AM	1.82	2.5	0.68	1.71	768.8
8/29/2011	1:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/29/2011	2:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/29/2011	3:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/29/2011	4:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/29/2011	5:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/29/2011	6:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/29/2011	7:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/29/2011	8:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/29/2011	9:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/29/2011	10:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/29/2011	11:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/29/2011	12:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/29/2011	1:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/29/2011	2:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/29/2011	3:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/29/2011	4:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/29/2011	5:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/29/2011	6:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/29/2011	7:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/29/2011	8:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/29/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/29/2011	10:00:00 PM	1.83	2.5	0.67	1.68	751.8
8/29/2011	11:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/30/2011	12:00:00 AM	1.82	2.5	0.68	1.71	768.8
8/30/2011	1:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/30/2011	2:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/30/2011	3:00:00 AM	1.85	2.5	0.65	1.60	718.1
8/30/2011	4:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/30/2011	5:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/30/2011	6:00:00 AM	1.83	2.5	0.67	1.68	751.8

8/30/2011	7:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/30/2011	8:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/30/2011	9:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/30/2011	10:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/30/2011	11:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/30/2011	12:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/30/2011	1:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/30/2011	2:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/30/2011	3:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/30/2011	4:00:00 PM	1.85	2.5	0.65	1.60	718.1
8/30/2011	5:00:00 PM	1.85	2.5	0.65	1.60	718.1
8/30/2011	6:00:00 PM	1.85	2.5	0.65	1.60	718.1
8/30/2011	7:00:00 PM	1.85	2.5	0.65	1.60	718.1
8/30/2011	8:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/30/2011	9:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/30/2011	10:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/30/2011	11:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/31/2011	12:00:00 AM	1.85	2.5	0.65	1.60	718.1
8/31/2011	1:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/31/2011	2:00:00 AM	1.88	2.5	0.62	1.49	668.7
8/31/2011	3:00:00 AM	1.87	2.5	0.63	1.53	685.0
8/31/2011	4:00:00 AM	1.86	2.5	0.64	1.56	701.5
8/31/2011	5:00:00 AM	1.86	2.5	0.64	1.56	701.5
8/31/2011	6:00:00 AM	1.85	2.5	0.65	1.60	718.1
8/31/2011	7:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/31/2011	8:00:00 AM	1.84	2.5	0.66	1.64	734.9
8/31/2011	9:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/31/2011	10:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/31/2011	11:00:00 AM	1.83	2.5	0.67	1.68	751.8
8/31/2011	12:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/31/2011	1:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/31/2011	2:00:00 PM	1.84	2.5	0.66	1.64	734.9
8/31/2011	3:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/31/2011	4:00:00 PM	1.79	2.5	0.71	1.83	820.6
8/31/2011	5:00:00 PM	1.78	2.5	0.72	1.87	838.1
8/31/2011	6:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/31/2011	7:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/31/2011	8:00:00 PM	1.8	2.5	0.70	1.79	803.2
8/31/2011	9:00:00 PM	1.82	2.5	0.68	1.71	768.8
8/31/2011	10:00:00 PM	1.81	2.5	0.69	1.75	785.9
8/31/2011	11:00:00 PM	1.81	2.5	0.69	1.75	785.9